Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

April 25, 2011

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014
ALTADENA ZONED DISTRICT
FIFTH SUPERVISORIAL DISTRICT (3-VOTES)

IT IS RECOMMENDED THAT THE BOARD:

Indicate its intent to deny the appeal, approve the conditional use permit and instruct County Counsel to prepare the necessary findings and conditions.

PURPOSE /JUSTIFICATION OF RECOMMENDED ACTION

The proposed facility is required to meet the demand of wireless device users in the area.

The proposed design and location are appropriate because the facility will be camouflaged as a pine tree and will be located near live trees that will help conceal it. Also, the equipment area will be screened by landscaping.

The proposed project is supported by the Altadena Town Council who represents the community.

FISCAL IMPACT/FINANCING

The proposed project will have a positive fiscal impact on Los Angeles County because the subject property is County owned and the County will receive lease revenues for the facility.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The applicant, AT&T Wireless, requested a conditional use permit to authorize the construction, operation and maintenance of a wireless telecommunications facility (WTF), a use that is subject to permit.

The proposed project consists of the construction of a WTF that includes a 100 foot tall monopine, nine panel antennas mounted at 95 feet high (as measured to the top of the antennas). Four equipment cabinets and other related equipment will be located in the 324 square-foot lease area. The site plan depicts another 300 square foot lease area for another carrier that will co-locate on the facility in the future. The lease areas will be enclosed by wrought iron fencing with landscaping concealing the fencing on the west, south and east sides. One parking space for maintenance vehicles is provided. Access to the facility is off of Loma Alta Drive.

The subject property is located at 147 East Loma Alta Drive in the unincorporated community of Altadena, Altadena Zoned District, R-1-10,000 (Single-family Residence) Zone and Altadena Community Standards District.

The .84 acre subject property is developed with flood control facilities. The drainage area is flanked by a paved pathway to the west and a concrete ditch to the east. The southeast side of the property is landscaped with trees. The perimeter of the property is secured with chain-link fencing.

Due to opposition from the neighbors, the Hearing Officer referred the case to the Regional Planning Commission on December 7, 2010. The Regional Planning Commission approved the conditional use permit with a vote of four to zero on February 9, 2011. The Fourth Supervisorial District was not represented by a commissioner at that time. The case was appealed on February 23, 2011.

Pursuant to subsection A of Section 22.60.230 of the County Code, the applicant appealed the Regional Planning Commission's decision to the Board of Supervisors on February 23, 2011. A public hearing is required pursuant to Section 22.60.240 of the County Code and Sections 65335 and 65856 of the Government Code. Notice of the hearing must be given pursuant to the procedures set forth in Section 22.60.174 of the County Code. These procedures exceed the minimum standards of Government Code Sections 6061, 65090, 65355, and 65856 relating to notice of public hearing.

ENVIRONMENTAL DOCUMENTATION

The proposed project is eligible for a Class 3 Categorical Exemption from California Environmental Quality Act reporting requirements because it is new construction of a small structure.

IMPACT ON CURRENT SERVICES OR PROJECTS

Action on the proposed conditional use permit is not anticipated to have a negative impact on current services. The Department of Public Works, who has jurisdiction over the subject property as a flood control basin, submitted correspondence, dated January 26, 2010, stating that the Department reviewed the WTF proposal and had no objections.

Respectfully submitted,

Richard J. Bruckner
Director

RJB:MC:de

Attachments: Commission Findings and Conditions, Commission Staff Report and attachments, Factual

c: Chief Executive Officer
County Counsel
Clerk of the Board
Assessor
Director, Department of Public Works
Chief, County Fire Department
Director, Department of Public Health
Director, Department of Regional Planning

NON-APPLICANT

Date 2/23/2011

Zoning Section
Los Angeles County Board of Supervisors
Room 383, Kenneth Hahn
Hall of Administration
500 West Temple Street
Los Angeles, California 90012

PROJECT NO./CUP NO.: R2010-00090-(5)

APPLICANT: AT+T Wireless

LOCATION: 147 E. Loma Alta Drive, Altadena

R-1 Zoned District

Related zoning matters:

CUP(s) or VARIANCE No.

Change of Zone Case No.

Other Altadena CSD is 35 feet. Modification CPU Acquired

This is an appeal on the decision of the Regional Planning Commission in the subject case. This form is to be presented with a check or money order made payable to the "Board of Supervisors", (check or money order must be presented with personal identification), prior to the appeal deadline at 5:00 p.m. at the above address. Contact the Zoning section of the Board of Supervisors for more information: (213) 974-1426.

This is to appeal: (Check one)

_____ The Denial of this request 789.00*

✓ The Approval of this request 789.00*

*For Subdivisions $130.00 of this amount is to cover the cost of the hearing of the Board of Supervisors

Briefly, explain the reason for the appeal (attach additional information if necessary):

See Attachment 1

x _____
(Signed) **Appellant**

Robert M. Gilchrest
Print Name

169 E. Loma Alta Drive, Altadena
Address

Altadena, 91001
City/Zip

213 709-5087
Day Time Telephone Number

robert@gilchrestlaw.com
E-mail Address

BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

2011 FEB 23 AM 9:36

FILED

ATTACHMENT 1

This is an appeal of a decision by the Los Angeles County Regional Planning Commission on February 9, 2011 to approve the application of AT&T Wireless ("AT&T") for a conditional use permit to construct, operate and maintain a wireless telecommunications facility ("WTF").

A. The Project

AT&T proposes to construct, operate and maintain the WTF (the "Project") in a flood control facility owned by the County of Los Angeles (the "County") and located at 147 East Loma Alta Drive, Altadena (the "Project Site").

By design, the flood control facility is at a low point at the foot of the San Gabriel Mountains and collects runoff from the Mountains. In other words, there is a direct, uninhibited and shrub-filed path leading from the drainage area up to the San Gabriel Mountains.

AT&T proposes to lease 324 square feet of land in the flood control facility from the County. AT&T proposes to locate the WTF amongst pine trees located just east of the drainage area in the flood control facility. The WTF will consist of a 100 foot tall monopine (i.e., fake pine tree) and nine panel antennas mounted at a height of 95 feet above ground level. Four equipment cabinets and other related equipment (including electrical equipment) will be located at ground level at the Project Site.

The County contemplates leasing another 300 square feet to another carrier (T-Mobile) to construct, operate and maintain a separate WTF at the Project Site in the near future. T-Mobile proposes a WTF that will consist of, among other things, a cell tower with panel antennas mounted at 83 feet high.

Significantly, mature pine trees at the Project Site are approximately 75 feet in height or shorter. The soil supporting the mature pine trees is loose, is largely covered by dead leaves, tree branches and pine needles, and is subject to compromise following rain storms. Pictures showing the soil condition at the Project Site accompany this appeal. Moreover, the area frequently is subjected to high winds coming off the San Gabriel Mountains. In recent months, at least one tree has fallen and others have begun or continue to lean to the side.

AT&T proposes to locate the WTF within an area zoned for single-family residences. There are single-family homes located around the Project Site, including one located approximately 80 feet east of the Site. The family living in the residence next to the Project Site includes two young children under seven years old. There are other young children, including at least one toddler, living within one-quarter mile of the Project Site.

Neither AT&T nor T-Mobile contends that its WTF is necessary because landline coverage offered in the area is inadequate. Nor does AT&T or T-Mobile contend that its WTF is necessary because wireless coverage offered by other carriers (competitors of AT&T and T-Mobile) in the area is inadequate. Rather, both concede that their WTFs are necessary because they (that is, AT&T and T-Mobile) have minimal wireless coverage in the area.

B. The Public Hearings And Short-Comings In The Staff Investigation And Report Submitted In Connection With Those Hearings.

The Project was submitted to two public hearings: (1) the December 7, 2010 hearing before Hearing Officer Alex Garcia, of the Department of Regional Planning; and (2) the February 9, 2011 hearing before the Regional Planning Commission.

1. The Staff Report for the December 7, 2010 Hearing

The Staff Report published before the December 7, 2010 hearing recommended approval of the Project because: (1) the Department of Public Works had no objections to the Project; (2) the 100 foot monopine (i.e., fake pine tree) and nine antennas mounted on the monopine at a height of 95 feet above ground level would be disguised as a tree; (3) ground equipment (including electrical equipment) would be disguised amongst mature trees and shrubs; (4) by letter, the Altadena Town Council supports the Project; and (5) the Project was exempt from California Environmental Quality Act ("CEQA") reporting requirements.

Absent from the Staff Report is any evidence that the Staff considered the fact that: (1) a 100 foot monopine containing nine antennas mounted at 95 feet above ground level will tower above the 75 feet and shorter indigenous pines surrounding it; (2) the monopine will stick out like a sore thumb amongst the much shorter mature pine trees surrounding it when viewed from homes in the area located at a height above Loma Alta Drive; and (3) the sight of this sore thumb alone plainly will have an adverse impact on the value of the homes whose view will be obstructed by the monopine.

The Staff Report trumpets the fact that, to mitigate the aesthetic impact of the Project, the WTF will be constructed, operated and maintained in a wooded area surrounded by indigenous pine trees and shrubs. However, the Staff Report fails to address the fire hazard created by the construction and operation of four cabinets to house, among other things, electrical equipment needed to operate and maintain the cell towers. The soil supporting the mature pine trees is loose. The area is subject to high winds coming off the San Gabriel Mountains. As a result, at least one pine tree has fallen on the Project Site since June 2010. There is a real danger that, if electrical cabinets are constructed on the Project Site, a falling tree will cause damage to the electrical cabinets and spark a fire in an area that just lived through the Station Fire. Noticeably absent from the Staff Report is any indication that this hazard was considered or investigated before the Staff recommended approval of the Project.

The Staff Report also recommended approval of the Project based on the support of the Altadena Town Council. The Staff Report points to a May 7, 2010 letter submitted by Gino Sund, Chairman of the Altadena Town Council. The May 7, 2010 letter states that, on April 20, 2010, the Town Council resolved to approve the Project. The resolution was based on a representation that the Town Council had contacted homeowners in the area and received overwhelming support for the Project. Altadena Town Council member Gregory Middleton has conceded that, due to budgetary constraints, the Town Council did not contact homeowners in the area. Mr. Middleton, Chairman Sund and other members of the Town Council have conceded that they are AT&T wireless subscribers. And Altadena Town Council member Okorie Ezinne works for 5Linx, a company that provides a wide-range of products and services for the wireless industry. It appears that these members of the Town Council have placed their own personal or professional interest above the interests of the residents of Altadena. In all events, there is no indication that the Staff conducted any due diligence before simply accepting the May 7, 2010 letter at face value.

Finally, the Staff Report states that the Project qualifies for Class 3 exemption from CEQA. Despite the fact that CEQA requires state and local agencies within California to follow a protocol of analysis and disclosure, noticeably absent from the Staff Report and file is proof that the Staff went through a CEQA analysis or obtained evidence (as opposed to applicant conclusions) that the Project would have no adverse impact under the CEQA guidelines.

2. The December 7, 2010 Hearing

Four homeowners in the area testified in opposition to the Project at the December 7, 2010 hearing. Among other things, the homeowners raised concerns about the lack of consideration (i.e., environmental review) of the fire hazard created by the Project, adverse impact on property values, aesthetics, health impact, wildlife impact, site selection and conflict of interest (because AT&T will pay the County a fee for leasing the County owned Project Site). Based on the comments of those who testified in opposition to the Project, Hearing Officer Garcia declined to act on the Staff's recommendation and, instead, referred the Project to the Regional Planning Commission for consideration. Before doing so, however, Hearing Officer Garcia commented that he had planned to approve the Project base largely on the support of the Altadena Town Council purportedly evidenced by the May 7, 2010 letter. As pointed out above, the May 7, 2010 reflects anything but the views of the residents with homes located near and around the Project Site and is simply not reliable.

3. The January 27, 2011 Staff Memorandum

The Department of Regional Planning published a Notice of Public Hearing (the "Notice") announcing the public hearing of the Project before the Regional Planning Commission on February 9, 2011. Among other things, the Notice indicated that the Project was exempt from CEQA and that the "Federal Telecommunications Act prohibits local governments from regulating the placement, construction and modification of

wireless service facilities on the basis of environmental effects (including health) of radio frequency emissions." Upon receipt of the Notice, one local homeowner emailed the Staff Member championing the Project that the Notice was misleading: that, as recent as 2009, the Ninth Circuit Court of Appeals twice has ruled that the Act does not eliminate state and local governments' constitutional authority to use existing state and local laws to evaluate and even deny an application to construct a cell tower as long as the decision is supported by reasonable evidence.

Thereafter, the Staff prepared draft findings and order for the Regional Planning Commission. Notably, the draft findings includes factual conclusions not found in the Staff Report published before the December 7, 2010 hearing. For example, Draft Finding 13 concludes that "[a] WTF will not adversely affect the health, peace, comfort, or welfare of persons residing or working in the surrounding area, will not be materially detrimental to the use, enjoyment, or valuation of property of other persons located in the vicinity of the site, and will not jeopardize, endanger, or otherwise constitute a menace to the public health, safety or general welfare because a disguised WTF will not create noise, pollution, crime, hazardous situations or be visually obtrusive." More importantly, the Draft Finding points to no evidence considered by the Staff to support these naked factual conclusions. No such evidence exists in the Staff file.

Draft Finding 14 points out that, while seven opponents opposed the Project, "[t]hirty-six proponents support the Project because the facility will improve cell-phone reception in the area, which the supporters explain is lacking in the area." The Draft Finding ignores entirely that the Project will improve "cell-phone reception" to AT&T wireless subscribers only and that, whether the Project were approved or disapproved, the AT&T wireless subscribers have the option to obtain better cell-phone reception by than that provided by AT&T simply by switching providers. This alternative and the disproportionate impact that the Project will have on local homeowners who chose to rely on landlines or providers who offer wireless service superior to that offered by AT&T is ignored entirely by the Staff.

4. The February 9, 2011 Hearing Before the Regional Planning Commission

Seven homeowners in the area testified in opposition to the Project at the February 9, 2011 hearing in person or by letter. The homeowners echoed concerns expressed by opponents of the Project at the December 7, 2010 hearing. The homeowners also pointed out that there is no evidence in the Staff files to support Draft Findings 13 and 14. In addition, the homeowners submitted a 2007 study commissioned by the Board of Supervisors of the City and County of San Francisco that address adverse health and environmental effects of wireless antennas and emissions. The homeowners also submitted a report addressing the adverse impact construction and operation of cell towers have had on property values in residential communities.

Several local homeowners testified in favor of the Project. Notably, each homeowner who testified in favor of the Project was hired by AT&T to promote the

Project, is an AT&T subscriber or sold products or services in the wireless industry. The common theme running through their testimony was that approval of the Project would improve cell phone reception in the area. This testimony is misleading to the extent that it is intended to suggest that cell phone reception for anyone but AT&T subscribers will be improved if the Project is approved.

It was apparent from the questions asked by the Commissioners that a decision to approve the Project already had been made before the February 9, 2011 hearing. One Commissioner, ignoring his public watch dog responsibilities under CEQA altogether, asked virtually every opponent of the Project whether s/he had a cell phone. The Commissioner openly smirked each time he received an affirmative answer.

A second Commissioner focused largely on aesthetics only. She concluded that communities should get use to approval of cell towers in residential areas and that the focus should be on minimizing any adverse aesthetic impact that new cell towers will have.

Only three of the four Commissioners participated in the public hearing. Nevertheless, the record reflects that all four Commissioners voted to approve the Project.

C. Summary of Appeal

Local public agencies are the watchdogs of residents of the community. CEQA makes environmental protection a mandatory part of every California state and local agency's decision making process. Environmental protection includes considering hazards created by a proposed project, the adverse impact a proposed project may have on aesthetics and private property values near and around the project site and the views of the residents directly impacted by the proposed project.

Here, the Department of Regional Planning has and the Regional Planning Commission have abandoned their watchdog responsibilities altogether. The Staff has largely ignored CEQA altogether and, instead, took the position that the Project enjoyed a Category 3 exemption from CEQA. Up until just before the February 9, 2011, the Staff reported few if any of the findings required to be made and supported by evidence to justify the Category 3 exemption. The naked draft findings made by the Staff in connection with the February 9, 2011 hearing (Draft Findings 13 and 14) are not supported by any substantial evidence in the Staff file.

AT&T and the Staff, working together, have created the illusion that the Project will have little if any adverse aesthetic impact by offering pictures and drawings from street level at Loma Alta Drive. The mature pine trees that will surround the 100 foot tall monopine are 75 feet in height or shorter. Thus, the 100 foot tall monopine with nine antenna panels mounted at 95 feet above ground level will tower above the mature pines, will become a permanent part of the views of homeowners with homes located above

Loma Alta Drive looking down at the Project Site and, as a result, plainly will cause an adverse impact of property values.

Interestingly, there are existing cell antennas mounted on a utility pole located near the corner of Loma Alta Drive and Lake Avenue in Altadena. As shown in the photographs included in this appeal, the utility pole is of standard height. The provider was not required to construct a 100 foot fake tree on which to mount the antennas because the corner of Loma Alta Drive and Lake Avenue is at an elevation much higher than the Project Site and is unobstructed by taller buildings or trees. There is no evidence that AT&T or the Staff considered mounting cell antennas on other utility poles located at this alternative and better-suited site.

To the extent that this Project has garnished agency approval based on the support of the Altadena Town Council, the Town Council members who voted in favor of the Project now concede that they never contacted homeowners near or around the Project Site, are AT&T subscribers and/or work in the wireless industry. The petition accompanying this appeal includes the signatures of forty-five residents who own homes near or around the Project Site that oppose this Project. Letters from homeowners near and around the Project Site also accompany this appeal.

The signatories of the petition feel that those charged with watchdog duties have placed the interest of AT&T and its wireless subscribers over the legitimate interests of the local property owners. The local homeowners who join in the appeal of the approval of the Project request that the Board of Supervisors set aside the approval and require the local agency to reconsider the Project in light of CEQA and other applicable state and local laws.

Pictures

The utility pole is located at the corner of Lake Ave and Alpine Villa Dr. This utility pole is located at an elevation of approximately 500ft above the 147 E. Loma Alta site. The height of the utility pole appears to be standard and in keeping with the other utility poles in the area.

View from northwest

View from southwest

View from south

Westerly view from the corner of Lake and Loma Alta to Marengo

Westerly view from Marengo and Loma Alta down the hill

The trees are leaning in the direction that the facility will be built.

View from northeast

View from southeast

View from south/southeast

View from east

Dead pine cones and pine needles covering ground at project site.

Letters

Board of Supervisors
Sachi A. Hamai
Executive Officer, Room 383
Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

February 18, 2011

RE: Project Number R2010-00090 – AT&T cell tower

Dear Board of Supervisors,

I live at 169 East Loma Alta Drive, Altadena, CA 91001 and I oppose the construction of a 100 foot tall cell phone tower at 147 East Loma Alta Drive, Altadena, CA 91001 for the following reasons:

1. The height restriction for buildings is 35 feet. The proposed tower - dressed as a tree or not - is nearly 3 times that height at 100 feet tall. The reason for this excessive height is poor location - a drain basin. There are many utility poles in Altadena and one of those poles could be used, as Commissioner Modugno mentioned at the hearing on 2/9/11. There are many high places in Altadena – like Lake Avenue and Loma Alta Drive, where, by the way, there is already a utility pole with two cell panels. Photo enclosed.
2. The electromagnetic fields (EMF) that are used to send the cell signals are known to have detrimental health effects on humans and animals. My property is adjacent to the drain basin and the tower will be built 80 feet from my property line. I have two small children, 5 and 6 ½, I do not want them subjected to the EMF's.
3. The property values of our homes will go down, especially those of us closest to the tower.
4. I am concerned that not only will AT&T have a tower, but in time, all carriers will be allowed to have towers operating in this location. A cluster of towers is completely unacceptable in a residential neighborhood – and by the way, it is totally unnecessary.
5. I am concerned that the county has voted on something for which it will gain financially. This is a conflict of interest. I did not find any mention of the amount of the payments that AT&T would make to the county. I did notice that the payments would be made biennially… and that the lease would last 15 years. I suspect that the monthly amount for this tower is anywhere between $6,000 and 10,000 per month. That is a significant amount of money.
6. There are very tall trees in the vicinity of the site of the tower. One of them fell down in early July of 2010. Many of them are leaning to the west, substantially, as that is the direction that the wind blows down from the mountains. This could be a huge hazard, if one of those trees was to fall onto the tower or the boxes that contain on the electrical equipment for the cell tower. I realize that someone thought it a good idea to "hide" the fake tower in a grove of trees, but those trees have already fallen down and may not be healthy. I did not see any report that a tree expert evaluated the trees to make sure they would not fall over in the next 15 years. Oddly, in the time that AT&T has been trying to get this project approved, one has fallen and was cut up and removed by the county.

All of the abovementioned items were noted at the hearing on December 7th with Hearing Officer Alex Garcia. It seems to me that the county, as the watchdog for the people had an obligation to address the abovementioned items and show how this 100 foot tall structure would not impact the residents of our neighborhood. There is no paper trail. It is only the opinion of the gentleman representing AT&T and that of Dean Edwards. But in reality, there should have been some hard evidence that supports their position before the February 9th hearing with the Regional Planning Commission

Robert Gilchrest is representing me in the appeal process regarding the abovementioned project and I have contributed to this appeal process financially.

Sincerely,

Rose Malmberg

Board of Supervisors
Sachi A. Hamai
Executive Officer, Room 383
Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

February 22, 2011

RE: Project Number R2010-00090 – AT&T cell tower

Dear Board of Supervisors,

My family and I live at 189 E Loma Alta Dr, Altadena, CA - three houses away from the proposed cell tower location at 147 E Loma Alta Dr. We are ***vigorously*** opposed to the construction of this tower. Mr. Robert Gilchrest is representing us in the appeal process for this project and we have contributed financially towards the cost of the appeal. Here are our chief concerns:

1. First and foremost, members of the Altadena Town Council (ATC) represented to both the AT&T representative as well as the County Planning Commission that they had "community approval" for this *specific* location. We beg to differ. Those of us who are currently opposing this project on numerous grounds only found out that this site was "approved" by the ATC AFTER the ATC met on this subject – ie we found out only when the County posted the hearing notice on the site and sent out letters/postcards. Essentially, we submit that the ATC may have had "approval" from *some* members of the community, but certainly not from many (if not most) of the people who would actually have to live *closest* to the tower. Why were we not asked/polled/notified by the ATC in time to give our opinion when we would be the ones most impacted by this location?

2. Despite raising our objections with ATC members and the ATC Land Use Committee once we *did* find out about this tower site being "approved" without our approval, ATC members seemed to largely rebuff our comments, saying that it had "already been discussed"/"already been approved" Not with us. Not by us. Furthermore, after I suggested that the ATC could have used any number of communication techniques to notify us/solicit our opinions (eg postcards, flyers, signage on the site, door-to-door etc) so that we wouldn't have been in this position to begin with, one council member conceded that those are all good ideas, but that the ATC didn't have the funding to do anything like that. So those of us CLOSEST to the tower site who oppose it didn't/don't get a chance to be truly represented by the ATC because of *their* lack of funding? This begs the question, then, if the ATC is really, in fact truly representing the views of "the community" as they testified under oath to the Planning Division.

3. The report issued by Mr. Dean Edwards to the County Planning Commission prior to the Feb 9th hearing states that there would be no effect on property values as a result of this tower being placed in this location, however, he offered no proof either in that report or in the hearing to support this claim. On the other hand, during the hearing, we discussed multiple studies that DO demonstrate negative effects on property values, with losses ranging between 2-20% - larger losses the closer the property is to the tower. ATC members, the AT&T representative and Mr. Edwards have all dismissed this concern. Oddly, though, in expressing her opinions before motioning to approve the CUP for the cell tower during the hearing on Feb 9th, County Planning Division Vice Chair Ms. Valadez **conceded** that property values might be affected by the tower going in, but (paraphrasing, as I was at the hearing but don't have a transcript), she offered that technology is just spreading everywhere so fast that eventually we'd probably all have towers in our backyards "someday" and so the issue of property values would probably all "even itself out" eventually. By saying what she said, Ms. Valadez **directly contradicted** the testimony of Mr. Edwards, the council members, the AT&T representative AND item B in the conclusions section of the Findings report issued AFTER the

hearing (ie that a tower should be approved because – in their opinions – property values would NOT be affected). So how does she acknowledge a negative effect on property values, yet still justify approving the tower permit based on her theory that it would "all even out someday". She offered no basis in fact for this opinion. We have studies to prove our position. Does she have studies to prove hers? Again, what she said DURING the hearing directly contradicts what was in the written Findings report AFTER the hearing.

4. In another ironic twist during the County Planning Division hearing on Feb 9th, Commissioner Bellamy stated to complainants in a previous case that same day (about a CUP for a gas tank) that people who moved into an area where there was *already* some sort of perceived nuisance/hazard shouldn't complain once they move in. So he called for there to be an effort for there to be more disclosure etc by local Real Estate agents about these things BEFORE people moved in. The irony in him saying that is that we did purchase our house BEFORE this site was considered for a cell tower. If we had seen a cell tower in the proposed location or even known this was a site under consideration at that time (it wasn't), we would NOT have purchased here. If we had been truly informed/represented by the ATC we would have objected BEFORE we got to this point. Loudly. We are also concerned that Mr. Bellamy is shown in the report following the Feb 9th hearing as approving the CUP for the cell tower, but he LEFT the hearing after the case regarding the gas tanks (the first case for the day – ours was the third of three on the agenda), and was not there for the rest of the hearing at all. How is it possible for him to approve a CUP when he wasn't even there to listen to any of that part of the hearing or ask us questions?

And lastly,

5. During the Feb 9th hearing, one of the commissioners noted the utility pole in the foreground of the photo with the photoshopped rendering of the proposed cell tower. He subsequently asked the AT&T representative if the *existing* utility poles such as the one in the photo were ever considered for placement of cell phone panels (thereby negating the need for a tower in our location at all). The AT&T representative said no, this approach had not been pursued. If not, why not?

Dearest members of the Board of Supervisors, as you can see by the above, there are several serious and unanswered questions/conflicts/concerns that have arisen in this matter that were not satisfactorily addressed and/or were even compounded during the County Planning Division's hearing on Feb 9th. It is on these grounds that my family and I feel that the decision to approve the tower warrants further review.

Thank you very much for your time, and we look forward to your carefully considered response to this matter.

Sincerely,

The Goeders Family at 189 E Loma Alta Dr.

Pilar, John, Oliver Thomas and Yael.

Board of Supervisors
Sachi A. Hamai
Executive Officer, Room 383
Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

February 22, 2011

RE: Project Number R2010-00090 – AT&T cell tower
East Loma Alta Dr.

Dear Board of Supervisors,

I oppose the construction of a 100 foot tall cell phone tower at 147 East Loma Alta Drive, Altadena, CA 91001 for the following reasons:

1. The height restriction for buildings is 35 feet. The proposed tower - dressed as a tree or not - is nearly 3 times that height at 100 feet tall. The reason for this excessive height is poor location - a drain basin. There are many utility poles and/or location in Altadena and one of those poles could be used which are a fair distance away from families. There are many high placed in Altadena – like Lake Avenue and Loma Alta Drive, where, by the way, there is already a utility pole with two cell panels.

2. I understand that the electromagnetic fields (EMF) that are used to send the cell signals are known to have detrimental health effects on humans and animals. My property is across from to the drain basin and the tower will be built within site of my property. I have grave concern of the effects of this electrical device on my health and the surrounding environment.

3. The property values of our homes will go down, especially those of us closest to the tower.

4. If this first tower is allowed to be built, I am concerned that not only will AT&T have a tower, but in time, this location will be known for the "so called" ideal spot for all carriers will be allowed to have towers operating there. A cluster of towers is completely unacceptable in a residential neighborhood – would you welcome it in your front, back or side yard?

5. I truly understand the current state of the economy and the desire for all to boost their bottom line by having other means of income. However, it is completely wrong to do this at the expense of others, particularly when it is a huge company like AT&T bulling their way to have this plan implemented. Additionally, those individuals of the City Council and County will benefit from the huge lease payment that they will realize in this proposal. This is a tremendous conflict of interest with regards to the City Council members, they are getting paid to protect us but fail to do so.

Sincerely,

Larry Brown – 160 East Loma Alta Drive, Altadena, CA 91001

February 22, 2011

Board of Supervisors
Sachi A. Hamai
Executive Officer, Room 383
Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

RE: Project Number R2010-00090 – AT&T cell tower

Dear Board of Supervisors,

I reside at 160 East Loma Alta Drive, Altadena, CA and I oppose the construction of a 100 foot tall cell phone tower at 147 East Loma Alta Drive, Altadena, CA 91001 for the following reasons:

How many residents showed up during your hearings in support of this proposed tower?
None!
How many letters of support *neither the town council – nor a fraudulent poll)* do you have in favor of this tower?
None!

Several residents who do opposed this cell tower took the time and participated in the hearing process to let you know that we do not want this cellular tower in our residential community. Please do not ignore us!

I would not have purchased my home if I had known that the cellular tower was being proposed across the street from my home. My plans are to sell my home in the near future; what happens when the tower becomes a barrier? Will the County of Los Angeles step up for me?

1.) Cellular towers are known to emit cancer causing radiation – my home sits within 100+/- from the 100 foot proposed tower. I am concerned that radiation will leak and affect my health. It seems that this known fact has been completely ignored by AT&T and the Zoning Commission – just brushed over like we do not even matter.
2.) The Altadena Town Council and AT&T did not poll the residents that reside closest to the proposed tower -- the residents closest to the tower should have a voice in this matter. We just learned that the poll submitted to the Zoning Commission was for another site. This is complete fraud! I'm appalled that no one from your office even verified the poll.
3.) I know that the County of Los Angeles and the Flood Control District is selling out our community to AT&T to make profits for the local government. This is a direct conflict of interest and should be considered criminal!
4.) The Flood Control Basin is a natural area with large old pine trees – these trees have fallen in recent months due to high winds. I am concerned that more trees will fall and become a major hazard to our community.

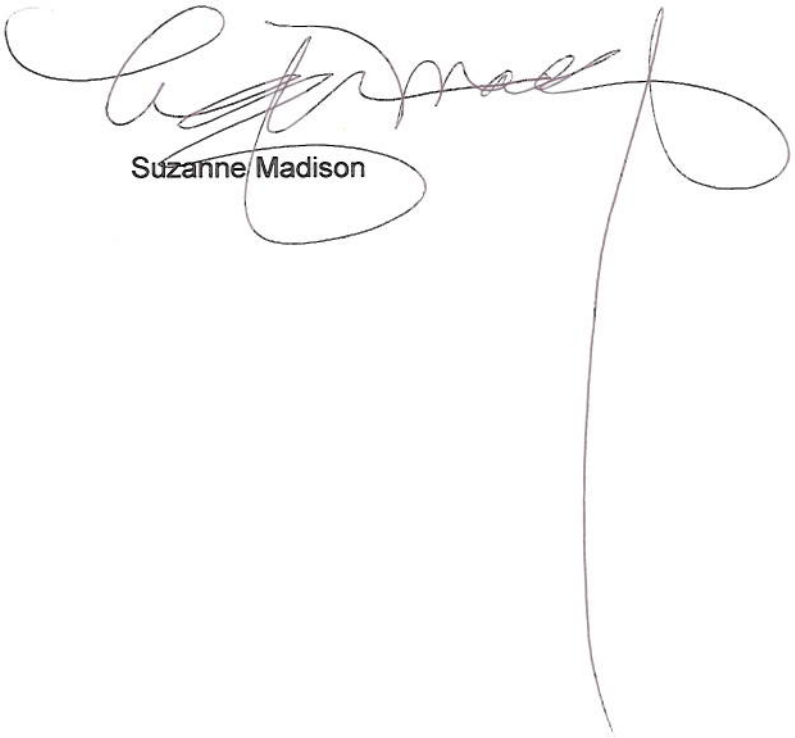
It also seems that as our elected officials – you…the board of supervisors should look out for the best interest of our community and the residents who live there. During this process it appeared that your staff is extremely eager to move this process forward with complete

disregard to how this cellular tower will affect our home and the community. Who's looking out for us? Not the County of Los Angeles! This is apparent.

Your proposed cellular tower will not benefit me in one single way. It will negatively impact my home value, views, but mostly....I feel completely betrayed by the Altadena Town Council, Los Angeles Zoning Commission, Flood Control District for allowing this to get this far in a residential community. This is wrong.

Please do not let me down by allowing this to happen!

An active voter, tax payer and Altadena home owner



Suzanne Madison

February 22, 2011

To Whom It May Concern:

My name is Ann Haigwood and I live at 3528 McNally Ave. My husband and I are represented by Robert Gilchrest in the appeal of the Cell Tower Project R2010-00090(5). I previously received information that there is a proposal to have a cell tower placed at 147 E. Loma Alta Dr., Altadena, CA. I WAS AND STILL AM STRONGLY OPPOSED TO THIS CONSTRUCTION AND WILL ACTIVELY OPPOSE IT.

My husband and I purchased our home 2 years ago. The construction of the project will devalue our home incredibly. Moreover, it will devalue ALL the properties in our neighborhood. It will be ugly, unsightly, and look awkwardly inappropriate.

I am also extremely concerned about the harmful effects from the proximity of this tower to my house. My yard faces the wash where the tower is being proposed. Without any additional environmental testing or medical expert information of how this will affect my health, my husband's health, and the health of the children in our neighborhood, this tower CANNOT BE BUILT HERE.

Additionally, there is a high risk of fire. Last year we had to evacuate because of the fires in the hills. This tower poses a huge fire hazard to our homes and property.

Again, I and all of my neighbors, will ACTIVELY oppose the building of the tower in this location. There are a number of options that are not harmful to persons or property, and that will not devalue the neighborhood. Please consider building in the hills next to existing towers already there.

I can be reached at the above address or by phone at 818-437-7823.
Thank you for your time.

Sincerely,

Ann Haigwood.

Feb 22, 2010

To Whom It May Concern,

I, Alicia Hahn, am allowing Mr. Robert Gilchrest to represent me in an appeal to prevent the building of an AT&T cell phone tower at 147 E. Loma Alta Dr. I have financially contributed to the appeal. I vehemently oppose the construction of the cell phone for several reasons. First and foremost, I am concerned of the health risks because of its proximity to my home on E. Loma Alta Dr. I am currently in nursing school and I have read studies linking the electromagnetic fields used to send cell signals with an adverse health effects on humans and animals. In addition, I am a married woman of childbearing age and I do not want any extra challenges in becoming pregnant or to risk the health of an unborn child.

I am also concerned about the environmental impact on the local wildlife. This area attracts more wildlife than other locations because it has water. There have been no studies to demonstrate that there will not have a negative impact on the animals or trees.

Thank you for your time,

Alicia Hahn

Alicia Hahn

161 E. Loma Alta Dr.

February 19, 2011

To Whom It May Concern:

I am a resident of Altadena and I am intensely in opposition to the proposed AT&T cell phone tower at 147 E. Loma Alta Dr. I have requested that Mr. Robert Gilchrest represent me in my appeal and as such have financially contributed to the appeal. I have lived in my residence on East Loma Alta Dr. for over 37 years and was appalled to learn that the county plans to build a 100 ft. tall monstrosity next to the drain basin. First of all, it is a drain basin, which means that it is the lowest point in the area. Therefore, instead of abiding by the height restriction of 35 ft, (which I am bound to), AT&T will be allowed to create a tower that looms 100ft. creating a ghastly sight because it will be 20ft. taller than any tree around. I propose that AT&T find another more suitable site that sits at a higher elevation. Furthermore, this horrifying tower will reduce my property value. According a study by Sandy Bond in the Fall 2007 Issue of *Appraisal Journal*, cell phone towers do indeed lower property values.

Respectfully,

Barbara J Johnson

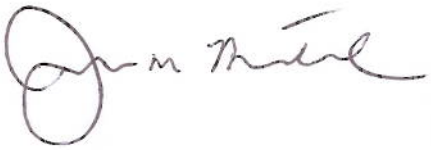
Barbara Johnson

20 Feb 2011

To Whom It May Concern:

I strongly oppose the building of an AT&T cell phone tower at 147 E. Loma Alta Dr. I am asking that Mr. Robert Gilchrest represent me, John Nathaniel, and I have financially contributed to the appeal. I have lived at my residence on East Loma Alta Dr. for over 30 years. When I was first asked about adding a cell phone tower to the neighborhood, based on its size and location, I was initially in support of it. However, when I was notified about the change in both location and size (by word of mouth ONLY), I became strongly opposed to it. This is what some people would call a "bait & switch". I am quite disappointed with the magnitude of fraud surrounding of this entire project and ask that another location be utilized.

Sincerely,



John Nathaniel

Petition

We the people, signed below, oppose the construction of a 100 foot tall cell tower at 147 E. Loma Alta Drive in Altadena, for the following reasons:

1. The height restriction for structures is 35 ft. This tower is nearly 3 times that height at 100 feet tall. The reason for the excessive height is poor location - a drain basin. We propose that you look at other locations where the height restrictions do not have to be waived.
2. The electromagnetic fields (EMF) that are used to send the cell signals are known to have detrimental health effects on humans and animals.
3. The property values of our homes will go down, especially those of us closest to the tower.
4. We are concerned that not only will AT&T have a tower, but in time, all carriers will be allowed to have towers operating in this location. A cluster of towers is completely unacceptable.

#	Print name / Signature	Street Address / City, State Zip	Phone / email	Check if you were you polled by ATC about this
1	Print name: Gaye Mims	Street Address: 181 1/2 E. Loma Alta Dr	Phone: (626) 798-5144	
	Signature: Gaye Mims	City, State Zip: Altadena CA 91001	email: GLM207@msn.com	
2	Print name: Gloria Mims	Street Address: 181 1/2 E. Loma Alta Dr	Phone: (626) 798-6831	
	Signature: Gloria Mims	City, State Zip: Altadena Ca, 91001	email	
3	Print name: Alicia Hahn	Street Address: 161 E. Loma Alta Dr.	Phone: 626-644-1456	
	Signature: Alicia Hahn	City, State Zip: Altadena CA 91001	email	
4	Print name: Karole Cooney	Street Address	Phone: (626) 570-5255	
	Signature: Karole Cooney	City, State Zip	email	
5	Print name: Richard Mauser	Street Address: 181 E Loma Alta Dr	Phone: 626 296-3224	
	Signature: [illegible]	City, State Zip: Altadena CA 91001	email	
6	Print name: Bernice Martin	Street Address: 179 E. Loma Alta	Phone: 626 798-5197	
	Signature: Bernice Martin	City, State Zip: 91001	email	
7	Print name: Maria Pillerana	Street Address: 179 E. Loma Alta	Phone: (626) 791-2423	
	Signature: [illegible]	City, State Zip: Altadena CA 91001	email	
8	Print name: Augusta R. Bohannon	Street Address: 163 E. Loma Alta Dr.	Phone: (323) 681-9750	
	Signature: Augusta R. Bohannon	City, State Zip	email: abohan@aol.com	
9	Print name: Jo [illegible] Griffin	Street Address: 182 E. Loma Alta Dr.	Phone: (626) 398-7367	
	Signature: [illegible]	City, State Zip: Altadena CA 91001	email: [illegible]@yahoo.com	
10	Print name: Larry P. Brown	Street Address: 166 E. Loma Alta Dr.	Phone: (323) 663-6031	
	Signature: Larry P. Brown	City, State Zip: Altadena CA 91001	email: Larry@Envy-Style.com	
11	Print name: Katherine Rodriguez	Street Address: 200 E. Loma Alta Dr	Phone: 818-402-2412	
	Signature: [illegible]	City, State Zip: Altadena, CA 91001	email: Katherine82698@gmail.com	
12	Print name: Wanda L. Hall	Street Address: 3682 Hollyslope Rd	Phone: 626-269-1210	
	Signature: Wanda L Hall	City, State Zip: Altadena, Ca 91001	email: W.Hall@sbcglobal.net	
13	Print name: Craig Hall	Street Address: 2980 [illegible] Dr	Phone: 818-363-3643	
	Signature: [illegible]	City, State Zip: Altadena CA 91001	email: chall11@msn.com	
14	Print name: Barbara Nathaniel	Street Address: 161 E. Loma Alta Dr.	Phone: 323-681-0414	
	Signature: Barbara Nathaniel	City, State Zip: Altadena, CA 91001-3926	email	

We the people, signed below, oppose the construction of a 100 foot tall cell tower at 147 E. Loma Alta Drive in Altadena, for the following reasons:

1. The height restriction for structures is 35 ft. This tower is nearly 3 times that height at 100 feet tall. The reason for the excessive height is poor location - a drain basin. We propose that you look at other locations where the height restrictions do not have to be waived.
2. The electromagnetic fields (EMF) that are used to send the cell signals are known to have detrimental health effects on humans and animals.
3. The property values of our homes will go down, especially those of us closest to the tower.
4. We are concerned that not only will AT&T have a tower, but in time, all carriers will be allowed to have towers operating in this location. A cluster of towers is completely unacceptable.

				Check if you were you polled by ATC about this
15	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
16	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
17	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
18	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
19	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
20	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
21	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
22	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
23	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
24	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
25	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
26	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
27	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
28	Print name	Street Address	Phone	
	Signature	City, State Zip	email	

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				Check if you were polled by ATC about this
29	Roxanne Armstrong Roxanne Armstrong	65 Reever Way Altadena, Ca 91001	Phone 818/631-2764 email roxanne24@earthlink	
30	Jesse Davis Jesse A.	503 W Loma Alta Dr. Altadena, CA 91001	Phone 510-289-9316 email	
31	Lisa Davis Lisa Davis	503 W Loma Alta Dr. Altadena, CA 91001	Phone email	
32	LAUREN MARKLE Lauren Markle	300 W LOMA ALTA ALTADENA CA 91001	Phone email	
33	MARY CROSS Mary Cross	300 W. Loma Alta Dr. Altadena CA 91001	Phone email marycross@hotmail.com	
34	Roberto Plaza Roberto Plaza	65 Reever Way Altadena CA 91001	Phone email	
35	Susan Heffner Susan Heffner	296 W. Loma Alta Altadena, CA 91030	Phone email	
36	Jenny Blake Jenny Blake	114 Reever Way Altadena CA 91001	Phone email	
37	NAVIN PINTO Navin Pinto	58 Reever Way Altadena CA 91001	Phone email	
38	STEPHANIE PINTO Stephanie Pinto	58 Reever Way Altadena CA 91001	Phone email	
39	Ryan Swerdloff Ryan Swerdloff	75 Reever Way Altadena CA 91001	Phone email	
40	Print name Signature	Street Address City, State Zip	Phone email	
41	Print name Signature	Street Address City, State Zip	Phone email	
42	Print name Signature	Street Address City, State Zip	Phone email	

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43	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
44	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
45	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
46	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
47	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
48	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
49	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
50	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
51	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
52	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
53	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
54	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
55	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
56	Print name	Street Address	Phone	
	Signature	City, State Zip	email	

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	Print name / Signature	Street Address / City, State Zip	Phone / email	Check if you were you polled by ATC about this
57	Michael O'Callaghan	748 E Green St.	Phone	
	[signature]	Pasadena CA 91106	email	
58	Rose Malmberg	169 E Loma Alta Dr	Phone	
	[signature]	Altadena CA 91001	email	
59	John W. Bohannon	163 E. Loma Alta Dr.	(323) 681-9750	
	[signature]	Altadena, CA	email	
60	Suzanne Madison	160 E. Loma Alta Dr.	(?) 271-7070	
	[signature]	Altadena, CA	suzanne@allegraconsulting.net	
61	Kimberly Rybd	1430 Rose Way	Phone	
	[signature]	Pasadena CA 91104	email	
62	Gregory White	455 Rising Hill	626 840 8129	
	[signature]	Altadena, CA 91001	gwhite@gmail.com	
63	Julie Bolger	2287 N. Mariposa St	626-794-7690	
	[signature]	Altadena CA 91001	jbolger908@mac.com	
64	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
65	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
66	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
67	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
68	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
69	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
70	Print name	Street Address	Phone	
	Signature	City, State Zip	email	

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71	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
72	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
73	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
74	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
75	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
76	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
77	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
78	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
79	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
80	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
81	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
82	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
83	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
84	Print name	Street Address	Phone	
	Signature	City, State Zip	email	

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				Check if you were you polled by ATC about this
85	Ransome Rideout	205 E. Loma Alta Dr.	(626) 797 8066	
		Altadena CA 91001	ransrideout@gmail.com	
86	Pilar Hayes Goeders	189 E Loma Alta Dr.	626.298.6132	
		Altadena, CA 91001	pgoeders@gmail.com	
87	RICHARD JONES	190 E. LOMA ALTA	6267985685	
		ALTADENA, CA 91001	email lilypadj@sbcglobal.net	
88	John Goeders	189 E. Loma Alta Dr	626-298-6132	
		Altadena, CA 91001	johnsf2000@hotmail.com	
89	Erin Oberosler	180 E. Loma Alta	626.393.3413	
		Altadena, CA 91001	erin_alderete@yahoo.com	
90	Enrique Rodriguez	200 E. Loma Alta Dr.	323-974-3080	
		Altadena, CA 91001	email	
91	John Nathaniel	161 E. Loma Alta Dr.	323-681-0414	
		Altadena, CA 91001	email	
92	Brian Carter	3469 Holly Slope Rd 91001	626-797 4747	
		Altadena Ca	email	
93	Jory Baker	3501 Holly Slope Rd	626-797-6084	
		Altadena 91001	email jory@charter.net	
94	Joe Hopkins	185 E Loma Alta	Phone 626-398-1194	
		Altadena CA 91001	email Joe.Hopkins@pacbell.net	
95	Kathleen Hopkins	185 E Loma Alta Dr	Phone 398-1194	
		Altadena CA 91001	email Khopkins@sbcglobal.net	
96	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
97	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
98	Print name	Street Address	Phone	
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				Check if you were you polled by ATC about this
99	CHARLES OBERSLER	180 E. LOMA ALTA DR	818-458-7980	
	Signature	ALTADENA, CA 91001	copikes@hotmail.com	
100	Robert Gilchrest	160 E. Loma Alta Dr.	213-709-5087	
	Signature	Altadena, CA 91001	robert@gilchrestlaw.com	
101	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
102	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
103	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
104	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
105	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
106	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
107	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
108	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
109	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
110	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
111	Print name	Street Address	Phone	
	Signature	City, State Zip	email	
112	Print name	Street Address	Phone	
	Signature	City, State Zip	email	

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

February 9, 2011

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

BDI – Derra Design
250 El Camino Real, 216
Tustin, CA 92780
Attention: Marc Myers

REGARDING: PROJECT NUMBER R2010-00090
CONDITIONAL USE PERMIT 201000014

Dear Applicant:

The Regional Planning Commission, by its action of February 9, 2011, **APPROVED** the above described project and entitlements. The attached documents contain the Regional Planning Commission's findings and conditions relating to the approval. Please carefully review each condition; including the requirement that the permittee file an affidavit accepting the conditions before the grants becomes effective.

The applicant or and other interested person may appeal the Regional Planning Commission's decision to the Board of Supervisors through the office of Sachi A. Hamai, Executive Officer, Room 383, Kenneth Hahn Hall of Administration, 500 West Temple Street, Los Angeles, California 90012. Please contact the Executive Office for the amount of the appeal fee at (213) 974-1426. The appeal period for this project will end at 5:00 p.m. on February 23, 2011. Any appeal must be delivered in person to the Executive Office by this time. If no appeal is filed during the specified period, the Regional Planning Commission action is final.

Upon completion of the appeal period, please notarize the attached acceptance forms and hand deliver this form and any other required fees or materials to the planner assigned to your case. Please make an appointment with the case planner to assure that processing will be completed expeditiously.

For further information on appeal procedures or any other matter pertaining to these approvals, please contact Dean Edwards of the Zoning Permits I Section at (213) 974-6443 or dedwards@planning.lacounty.gov. Our office hours are Monday through Thursday, 7:30 a.m. to 5:30 p.m. We are closed on Fridays.

Sincerely,

DEPARTMENT OF REGIONAL PLANNING
Richard J. Bruckner
Director

Mark Child, Supervising Regional Planner
Zoning Permits I Section

Enclosures: Findings and Conditions, Affidavit (Permittee's Completion)

c: DPW (Building and Safety)

MC:de

FINDINGS AND ORDER
OF THE REGIONAL PLANNING COMMISSION
COUNTY OF LOS ANGELES

PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014

REQUEST
The applicant, AT&T Wireless, is requesting a conditional use permit to authorize the construction, operation and maintenance of a wireless telecommunications facility (WTF), a use that is subject to permit.

HEARING DATE: December 7, 2010 and February 9, 2011

PROCEEDINGS
A duly noticed public hearing was held on December 7, 2011 before Hearing Officer, Alex Garcia. The applicant's agent, Mark Meyers stated that the applicant concurs with the project conditions. Four people testified in opposition to the project, citing concerns about: inadequate environmental review, health impacts, fire hazards, wildlife, site selection, aesthetics, property values and conflict of interest (because County owns site). One letter of opposition was presented to the Hearing Officer during hearing. The Hearing Officer stated that the project is compatible with the character of the area. He referred the case to Regional Planning Commission to allow testifiers further time to review the case materials.

A duly noticed public hearing was held on February 9, 2011 before the Regional Planning Commission. The applicant's agent, Marc Meyers testified in favor of the application.

Three people from the community testified in support of the project. The Altadena Town Council president stated that the Council participated in the selection process, ruling out six other sites. He also stated the facility is necessary to provide needed coverage in the area. Another Town Council member testified that 70% of residents polled in the area supported the project and the Town Council unanimously recommended approval of the project. The president of the local neighborhood watch group testified that she supports the project because it will provide coverage during an emergency such as wild fires that the area is subject to.

Four people testified in opposition to the project citing the same concerns that were identified in December 7, 2011 hearing. In his rebuttal, Mr. Meyers stated that the facility is engineered to be stable and safe and that no existing landscaping will be removed.

Commissioner Modugno inquired if nearby telephone poles were considered for co-location. Mr. Meyer replied that right-of-way sites were not considered.

Commissioner Valadez stated that she was concerned that the facility would not be built as depicted in the photo simulations. Condition 22 requires that it be built as depicted in the simulations. Commissioner Valadez stated more WTFs are required to meet the demand of wireless device users, that she supports the chosen location for the facility and moved that case be approved. Commission Helsley seconded the motion. Commissioner Modugno closed the public hearing and approved Conditional Use Permit 201000014.

FINDINGS
1. The proposed project consists of the construction of a WTF that includes a 100 foot tall monopine, nine panel antennas mounted at 95 feet high (as measured to the top of the antennas). Four equipment cabinets and other related equipment will be located in the 324 square-foot lease area. The site plans depicts another 300 square foot lease area for another carrier that will co-locate on the facility in the future. The lease areas will be enclosed by wrought iron fencing with landscaping concealing the fencing on the west,

south and east sides. One parking space for maintenance vehicles is provided. Access to the facility is off of Loma Alta Drive.

2. The subject property is located at 147 East Loma Alta Drive in the unincorporated community of Altadena and Altadena Zoned District.

3. The .84 acre subject property is developed with flood control facilities. The drainage area is flanked by a paved pathway to the west and a concrete ditch to the east. The south east side property is landscaped with trees. The perimeter of the property is secured with chain link fencing.

4. Four other sites within 1.9 miles of the subject property were considered by the applicant and deemed infeasible.

5. The Altadena Community General Plan land use designation of the subject property is Flood Control Facilities. There are no policies in the Plan that specifically prohibit, discourage or limit the use of WTFs. The proposed project is consistent with the Altadena Community General Plan.

6. Title 22 of the Los Angeles County Code (Zoning Ordinance) does not specify WTF as a use. Similar uses, such as radio/television stations/towers, are subject to permit.

7. The Department of Public Works' correspondence dated January 26, 2010 states that The Department reviewed the WTF proposal and had no objections.

8. The Altadena Town Council submitted a letter dated May 7, 2010 stating the Council recommends approval of the project with a condition to screen fencing with landscaping.

9. The maximum allowable height in the R-1 Zone and Altadena CSD is 35 feet. The CSD height limit may be modified by a conditional use permit.

10. The .84 acre subject property is adequate in size and shape to accommodate the development. The facility is setback from the front property line approximately 32 feet which is in compliance with the 20 foot requirement. The rear and side yards are also in compliance. One parking space for maintenance vehicles is required and provided.

11. The subject property is adequately served by public and private service facilities as necessary. A WTF does not require sewer or water service.

12. The subject property is adequately served by highways and streets of sufficient width and improved as necessary to carry the kind and quantity of traffic associated with this project. The site is served by Loma Alta Drive. The facility will generate approximately one maintenance vehicle trips a month which the aforementioned street should be able to accommodate.

13. The proposed design is appropriate for the site and area because it is camouflaged as a pine tree and located near other similar trees that will help conceal it. Also the equipment area will be screened by landscaping.

14. Seven letters of opposition to the project cited concerns about inadequate environmental review, health impacts, fire hazards, wildlife, site selection, aesthetics, property values, conflict of interest (because County owns site). 35 letters of support were received. Proponents support the project because they believe the facility will improve cell-phone reception in the area.

15. The proposed project is eligible for a Class 3 Categorical Exemption from California Environmental Quality Act reporting requirements because it is new construction of a small structure.

16. The subject property is surrounded by single-family and multi-family residences.

17. The Commission determined that the monopine would not be visually intrusive because it will be adequately screened and disguised as a monopine as shown in the photo simulations presented to the Commission at the February 9, 2011 hearing. The Commission noted that the use of high branch count and high-quality cladding, thereby resulting in a monopine of superior quality ensures that the project will be in keeping with the visual character of the surrounding area.

18. Pursuant to the provisions of Sections 22.60.174 and 22.60.175 of the County Code, the community was appropriately notified of the public hearing by mail, newspaper and property posting.

19. To assure continued compatibility between the use of the subject property allowed by this grant and surrounding land uses, the Regional Planning Commission determines that it is necessary to limit the term of the grant to 15 years and require eight inspections.

20. The location of the documents and other materials constituting the record of proceedings upon which the Regional Planning Commission's decision is based in this matter is at the Los Angeles County Department of Regional Planning, 13th Floor, Hall of Records, 320 West Temple Street, Los Angeles, CA 90012. The custodian of such documents and materials shall be the Section Head of the Zoning Permits 1 Section, Los Angeles County Department of Regional Planning.

BASED ON THE FOREGOING, THE REGIONAL PLANNING COMMISSION CONCLUDES:

A. That the proposed use is consistent with the adopted general plan for the area; and

B. That the requested use at the proposed location will not adversely affect the health, peace, comfort, or welfare of persons residing or working in the surrounding area, will not be materially detrimental to the use, enjoyment, or valuation of property of other persons located in the vicinity of the site, and will not jeopardize, endanger, or otherwise constitute a menace to the public health, safety or general welfare; and

C. That the proposed site is adequate in size and shape to accommodate the yards, walls, fences, parking and loading facilities, landscaping and other development features prescribed in this title, or as is otherwise required in order to integrate said use with the uses in the surrounding area; and

D. That the proposed site is adequately served by highways or streets of sufficient width and improved as necessary to carry the kind and quantity of traffic such use would generate, and by other public or private service facilities as are required.

Therefore, the information submitted by the applicant and presented at the public hearing substantiates the required findings and burden of proof for a conditional use permit as set forth in Section 22.56.040 of the Los Angeles County Code.

ACTION

1. We have considered the Categorical Exemption for this project and certify that it is consistent with the finding by the State Secretary for Resources or by local guidelines that this class of projects does not have a significant effect on the environment.

2. In view of the findings of fact and conclusions presented above, Conditional Use Permit 201000014 is **APPROVED,** subject to the attached conditions.

VOTE
Concurring: Valadez, Helsley, Modugno and Bellamy

Dissenting:

Abstaining:

Absent:

Action Date: February 9, 2011

Copy: Each Commissioner and Building and Safety

1. This grant authorizes the construction, operation and maintenance of a wireless telecommunications facility that includes: a 100 foot tall monopine; nine panel antennas mounted at 95 feet high (as measured to the top of the antennas); four equipment cabinets and other related equipment located in a 324 square-foot lease area; and another 300 square foot lease area for a future co-locating carrier.

2. Unless otherwise apparent from the context, the term "permittee" shall include the applicant and any other person, corporation or other entity making use of this grant.

3. This grant shall not be effective for any purpose until the permittee, and the owner of the subject property if other than the permittee, have filed at the office of the Department of Regional Planning their affidavit stating that they are aware of and agree to accept all of the conditions of this grant, and that the conditions of the grant have been recorded as required by Condition 7, and until all required monies have been paid pursuant to Condition 10. The recorded affidavit shall be filed and the required monies shall be paid by **April 10, 2011**.

4. The permittee shall defend, indemnify and hold harmless the County, its agents, officers, and employees from any claim, action, or proceeding against the County or its agents, officers, or employees to attack, set aside, void or annul this permit approval, which action is brought within the applicable time period of Government Code Section 65009. The County shall promptly notify the permittee of any claim, action, or proceeding and the County shall cooperate reasonably in the defense. If the County fails to promptly notify the permittee of any claim action or proceeding, or if the County fails to cooperate fully in the defense, the permittee shall not thereafter be responsible to defend, indemnify, or hold harmless the County.

5. In the event that any claim, action, or proceeding as described above is filed against the County, the permittee shall within ten days of the filing pay the Department of Regional Planning an initial deposit of $5,000, from which actual costs shall be billed and deducted for the purpose of defraying the expenses involved in the department's cooperation in the defense, including but not limited to, depositions, testimony, and other assistance to permittee or permittee's counsel. The permittee shall also pay the following supplemental deposits, from which actual costs shall be billed and deducted:

   a. If during the litigation process, actual costs incurred reach 80 percent of the amount on deposit, the permittee shall deposit additional funds sufficient to bring the balance up to the amount of the initial deposit. There is no limit to the number of supplemental deposits that may be required prior to completion of the litigation.

   b. At the sole discretion of the permittee, the amount of an initial or supplemental deposit may exceed the minimum amounts defined herein.

   The cost for collection and duplication of records and other related documents will be paid by the permittee according to Los Angeles County Code Section 2.170.010.

6. If any provision of this grant is held or declared to be invalid, the permit shall be void and the privileges granted hereunder shall lapse.

7. Prior to the use of this grant, the property owner or permittee shall **record the terms and conditions** of the grant in the office of the County Recorder. In addition, upon any transfer or lease of the property during the term of this grant, the property owner or permittee shall promptly provide a copy of the grant and its conditions to the transferee or lessee of the subject property.

8. **This grant will terminate on February 9, 2026.** Entitlement to use of the property thereafter shall be subject to the regulations then in effect. At least six (6) months prior to the expiration of this permit and in the event that the permittee intends to continue operations after such date, a new conditional use permit application shall be filed with the Department of Regional Planning. The application shall be a request for continuance of the use permitted under this grant, whether including or not including modification to the use at that time.

9. This grant shall expire unless used within two years from the date of final approval by the County. The date of final approval is the date of the approval action plus any applicable appeal period. A single one-year time extension may be requested in writing and with the payment of the applicable fee prior to such expiration date.

10. The subject property shall be maintained and operated in full compliance with the conditions of this grant and any law, statute, ordinance, or other regulation applicable to any development or activity on the subject property. Failure of the permittee to cease any development or activity not in full compliance shall be a violation of these conditions. The permittee shall deposit with the County of Los Angeles the sum of **$1,600.00**. The deposit shall be placed in a performance fund, which shall be used exclusively to compensate the Department of Regional Planning for all expenses incurred while inspecting the premises to determine the permittee's compliance with the conditions of approval. The deposit provides for **eight (8) biennial (one every other year)** inspections. Inspections shall be unannounced.

    If additional inspections are required to ensure compliance with the conditions of this grant, or if any inspection discloses that the subject property is being used in violation of any one of the conditions of this grant, the permittee shall be financially responsible and shall reimburse the Department of Regional Planning for all additional enforcement efforts necessary to bring the subject property into compliance. Inspections shall be made to ensure compliance with the conditions of this grant as well as adherence to development in accordance with the approved site plan on file. The amount charged for additional inspections shall be $200.00 per inspection, or the current recovery cost, whichever is greater.

11. Notice is hereby given that any person violating a provision of this grant is guilty of a misdemeanor. Notice is further given that the Regional Planning Commission or a hearing officer may, after conducting a public hearing, revoke or modify this grant, if the Commission or hearing officer finds that these conditions have been violated or that this grant has been exercised so as to be detrimental to the public's health or safety or so as to be a nuisance.

12. Upon receipt of this letter, the permittee shall contact the Fire Prevention Bureau of the Los Angeles County Fire Department to determine what facilities may be necessary to protect the property from fire hazard. Any necessary facilities shall be provided as may be required by said Department.

13. All requirements of the Zoning Ordinance and of the specific zoning of the subject property must be complied with unless otherwise set forth in these conditions or shown on the approved plans.

14. All structures, walls and fences open to public view shall remain free of extraneous markings, drawings or signage that was not approved by the Department of Regional Planning. These shall include any of the above that do not directly relate to any business

that may being operated on the premises or that do not provide pertinent information about said premises.

15. The facility shall be operated in accordance with regulations of the State Public Utilities Commission.

16. Upon completion of construction of the facility, the permittee shall submit to the Zoning Enforcement Section of the Department of Regional Planning written certification that the radio frequency electromagnetic emissions levels comply with adopted Federal Communications Commission (FCC) limitations for general population/uncontrolled exposure to such emissions when operating at full strength and capacity. If other WTFs are located on the subject property or on adjacent parcels, the aforementioned report shall include the radio frequency electromagnetic emissions of said WTFs.

17. Insofar as is feasible, the operator shall cooperate with any subsequent applicants for wireless communications facilities in the vicinity with regard to possible co-location. Such subsequent applicants will be subject to the regulations in effect at that time.

18. Any proposed WTF that will be co-locating on the proposed facility will be required to submit the same written verification of emissions and include the cumulative radiation and emissions of all such facilities to the Zoning Enforcement Section of the Department of Regional Planning.

19. All structures shall conform to the requirements of the Division of Building and Safety of the Department of Public Works or other appropriate agency and obtain an encroachment permit if deemed necessary.

20. External lighting, including security lighting, shall be on motion sensors, be of low intensity, fully shielded and directed away from any adjacent residences. Pole mounted lighting is prohibited on the leasehold unless the facility is disguised as a light pole. Antenna lighting is prohibited. Beacon lights are prohibited unless required by the FAA.

21. If the subject property is adjacent to residences, construction and maintenance of the facility shall be limited to the hours of 9:00 AM to 5:00 PM, Monday through Friday. Emergency repairs of the facility may occur at any time.

22. The project shall be developed and maintained in substantial compliance with the approved plans marked Exhibit "A". Placement and height of all pole mounted equipment shall be in substantial conformance with that shown on said Exhibit "A". The facility shall be built as depicted in the photo simulations presented at the February 9, 2011 public hearing, which depict a high quality monopine including, but not limited to, high-quality cladding materials and a high branch count.

23. One parking space for maintenance vehicles shall be provided. The space does not have to be dedicated solely to maintenance vehicles. Maintenance vehicles shall not block access to driveways or garages.

24. The maximum height of the facility shall not exceed 100 feet above finished grade.

25. Within 30 days of change in service provider ownership, the permittee shall provide the Zoning Enforcement Section of the Department of Regional Planning the name and contact information of the new property owner.

26. The finished surface of the facility shall not be glossy or reflective in nature unless such finish is necessary to blend into existing design features. The finish shall be graffiti-resistant and shall have a color that blends in with the immediately surrounding environment.

27. The facility shall be maintained in good condition and repair, and shall remain free of: general dirt and grease; chipped, faded, peeling or cracked paint; trash, debris, litter, graffiti and other forms of vandalism; cracks, dents, blemishes and discolorations; visible rust or corrosion on any unpainted metal areas. Any damage from any cause shall be repaired within 30 days of notice. Weathered, faded or missing parts/materials used to disguise/camouflage the facility shall be maintained and/or replaced within 30 days of notice. Any and all graffiti shall be removed by the operator or property owner within 48 hours. Provided landscaping shall be maintained at all times and shall be promptly replaced if needed.
28. Upon request, the permittee/operator shall submit annual reports to the Zoning Enforcement Section of the Department of Regional Planning to show compliance with the maintenance and removal conditions.
29. The Department of Regional Planning project number, conditional use permit number and lease holder contact information shall be prominently displayed on the facility where it can be easily viewed at or near eye level.
30. The facility shall be secured by fencing, gates and/or locks. All fencing or walls used for screening or securing the facility shall be composed of wood, vinyl, stone, concrete, stucco or wrought iron. Chain links, chain link with slats, barbed and other types of wire fencing are prohibited. If the facility's fences or walls are visible from the public right-of-way, landscaping, in a minimum planter width of five feet, shall be provided to screen the fence or wall from the street.
31. New equipment added to the facility shall not compromise the stealth design of the facility.
32. Antennas shall be painted or covered to match their background (branches or trunk). The antennas shall not extend beyond the monotree branches or fronds. There shall be ample branch coverage to hide the antennas from view as effectively as possible. Faux bark cladding shall be provided from the ground to five feet beyond where the faux branches begin; above the faux bark shall be flat non-reflective brown paint to match the bark.

MC:de

2/9/2011

Attachments: Photo Simulation(s)

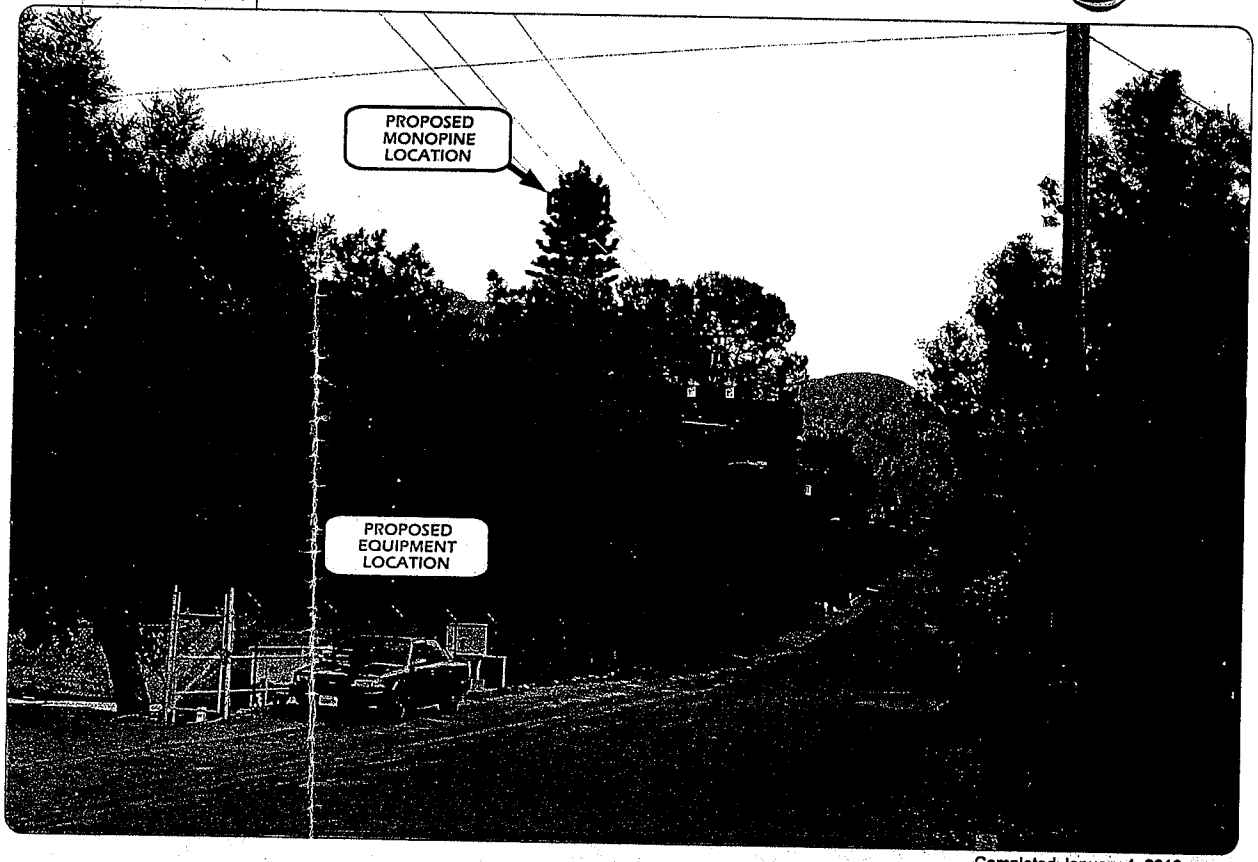
LOCATION

Microsoft® Virtual Earth™

View from the Southwest to the Northeast

EXISTING

PROPOSED



at&t

Completed January 4, 2010

SV0160B

LA County Public Works

147 East Loma Alta
Altadena, CA 91001

VIEW 1

APPLICANT

at&t Mobility
12900 Park Plaza Drive
Cerritos, CA 90703

CONTACT

Bemis Developement & Derra Design
Kathy O'Connor-Phelps
250 El Comino Real Suite 216
Tustin, CA 92780
p 714.625.5930

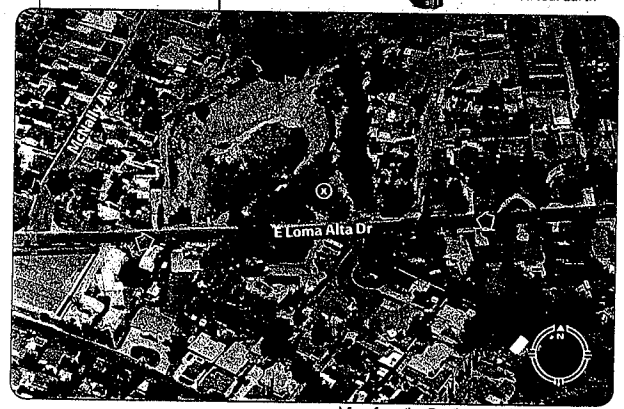
Blue Water DESIGN

BLUE WATER DESIGN
1741 Tustin Ave. 19A
Costa Mesa, CA 92627
bluewater-design.net
michelle@bluewater-design.net
p 714.473.2942
f 949.631.2316

Photo simulation accuracy is based on information provided to Blue Water Design by the applicant.

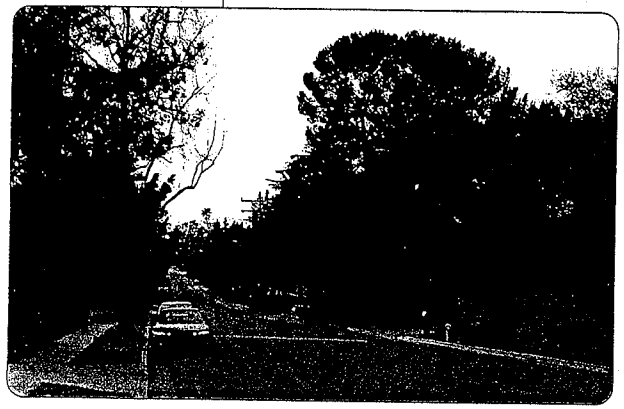
LOCATION

Microsoft® Virtual Earth™

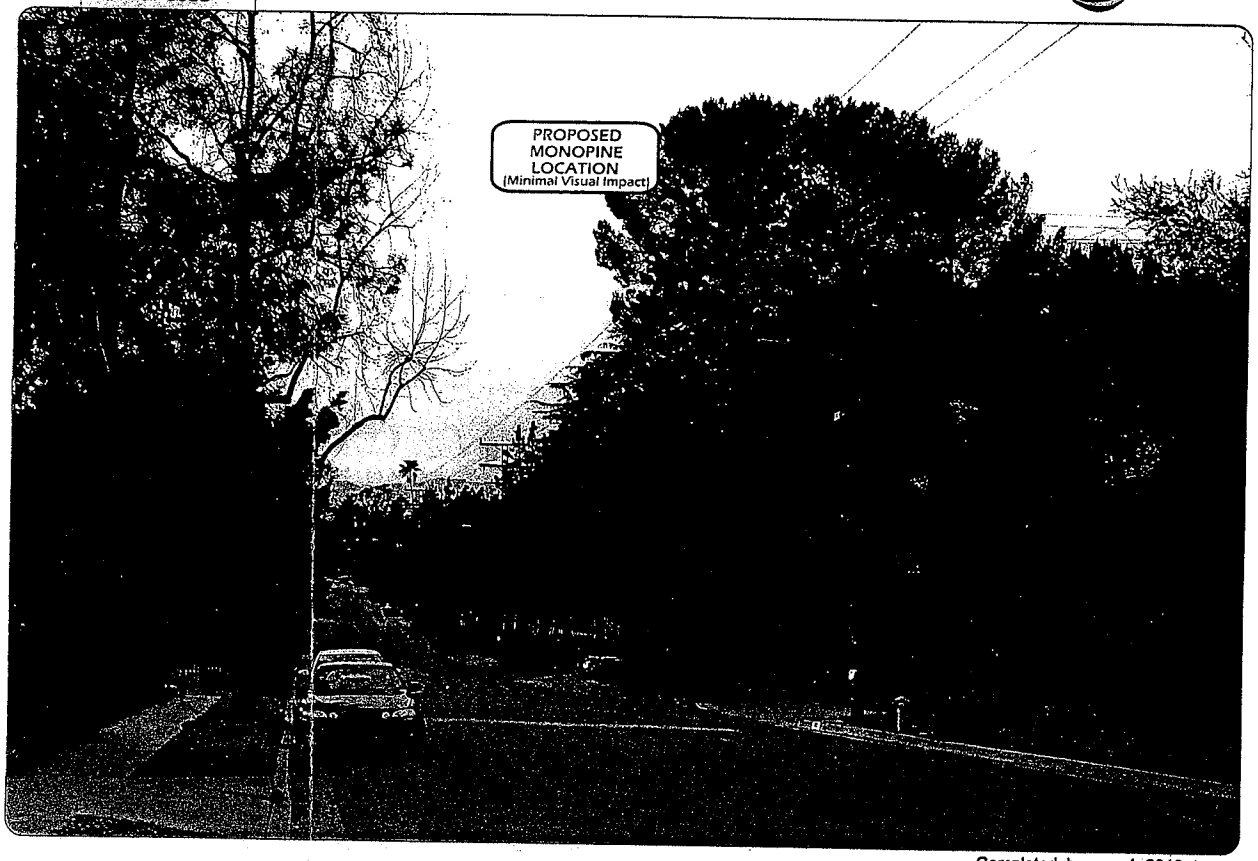


View from the Southeast to the Northwest

EXISTING



PROPOSED



at&t

Completed January 4, 2010

SV0160B

LA County Public Works

147 East Loma Alta
Altadena, CA 91001

VIEW 2

APPLICANT

at&t Mobility
12900 Park Plaza Drive
Cerritos, CA 90703

CONTACT

Bemis Developement & Derra Design
Kathy O'Connor-Phelps
250 El Comino Real Suite 216
Tustin, CA 92780
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Blue Water DESIGN

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Costa Mesa, CA 92627
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f 949.631.2316

Photo simulation accuracy is based on information provided to Blue Water Design by the applicant.

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

January 27, 2011

TO: Pat Modugno, Chair
Esther L. Valadez, Vice Chair
Leslie G. Bellamy, Commissioner
Harold V. Helsley, Commissioner

FROM: Mark Child
Zoning Permits North

SUBJECT: PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014
RPC Meeting: February 9, 2011
Agenda Item 8

Please see the attached staff report, findings and conditions related the above project that was prepared for the hearing officer for a public hearing on December 7, 2010. The project is to construct a 100 ft. tall wireless telecommunications tower and associated equipment on a County of Los Angeles owner flood control property in the Altadena area. At the December 7, 2010 hearing, four persons testified in opposition to the project, citing concerns related to inadequate environmental review, health impacts, fire hazards, wildlife impact, site selection, aesthetics, property values and conflict of interest (because it is a County owned property). Due to the controversy and to allow testifiers further time to review the case materials, the Hearing Officer referred the project to the Regional Planning Commission for consideration.

The community has been notified of the February 9, 2011 hearing by mail, newspaper, property posting and library posting.

Since the hearing officer hearing, correspondence supporting the proposed project has been received from 35 people in the community. No other new information has been submitted since the aforementioned hearing and therefore the staff's recommendation remains to APPROVE the conditional use permit with a grant term of 15 years. Following are staff's reasons for this recommendation:

- There are no known zoning violations on the property.
- The Department of Public Works supports the project.
- The Altadena Town Council participated in the site selection and supports the project.
- The community supports the project because it will improve cell-phone reception in the area.
- With a conditional use permit, the proposed facility will comply with Zoning Ordinance height restrictions.
- The facility is designed to be visually unobtrusive.

Recommended Motion

I move that the Regional Planning Commission close the public hearing and approve Conditional Use Permit 201000014.

Attachments:

1. Hearing Officer Hearing Package
2. Revised Draft Findings
3. Revised Draft Conditions
4. Additional Opposition Correspondence (3)
5. Support Correspondence (35)
6. Coverage Maps
7. Aerial Photo
8. Photos
9. Simulations
10. Site Plan
11. Land Use Map

MC:de

DRAFT FINDINGS AND ORDER
OF THE REGIONAL PLANNING COMMISSION
COUNTY OF LOS ANGELES

PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014

REQUEST
The applicant, AT&T Wireless, is requesting a conditional use permit to authorize the construction, operation and maintenance of a wireless telecommunications facility ("WTF"), on a leased portion of a parcel located at 147 East Loma Alta Drive in the unincorporated community of Altadena.

HEARING DATE: December 7, 2010, and February 9, 2011

PROCEEDINGS
A duly noticed public hearing was held on December 7, 2011, before Hearing Officer, Alex Garcia. The applicant's agent, Mark Myers, stated that the applicant was in agreement with the conditions that were proposed for the project. Four people testified in opposition to the project, citing concerns about: inadequate environmental review, health impacts, fire hazards, wildlife, site selection, aesthetics, property values, and conflict of interest because County owns site. One letter of opposition was presented to the Hearing Officer during hearing. Although the Hearing Officer stated that the project appeared to be compatible with the character of the area, the Hearing Officer nevertheless determined that because of the community concerns that were raised and the communitywide implications of the project, the case should be considered by the Regional Planning Commission ("Commission"). Therefore, the Hearing Officer referred the case to Regional Planning Commission to allow for further consideration of the matter.

FINDINGS

1. The proposed project consists of the construction of a WTF on an approximately 324 square foot leased area on a parcel located at 147 East Loma Alta Drive in the unincorporated community of Altadena in the Altadena Zoned District. The WTF consists of a 100 foot tall monopine with nine panel antennas mounted at 95 feet high (as measured to the top of the antennas). Four equipment cabinets and other related equipment will be located within the lease area which will be enclosed by wrought iron fencing with landscaping concealing the fencing on the west, south, and east sides. One parking space for maintenance vehicles is provided. Access to the facility is off of Loma Alta Drive.

2. The .84 acre subject property is developed with flood control facilities and owned by the Los Angeles County Flood Control District. The drainage area is flanked by a paved pathway to the west and a concrete ditch to the east. The south east side property is landscaped with trees. The perimeter of the property is secured with chain link fencing.

3. One other site located at 3406 Fair Oaks Avenue was considered by the applicant and deemed infeasible because the community opposed the location. All co-location opportunities are located more 0.25 miles away and are therefore infeasible.

4. The Altadena Community Plan land use designation of the subject property is Flood Control Facilities. There are no policies in the Plan that specifically prohibit, discourage or limit the use of WTFs. There are policies in the Plan that promote preservation of the single-family character of the area and allow intensification of uses when it does not adversely impact existing uses. The proposed project is to disguise the telecommunications tower as a pine tree in an area that contains many live pine trees. This camouflaging treatment ensures that the visual character of the area is not adversely affected and therefore the project can be found consistent with the Altadena Community General Plan.

5. Although Title 22 of the Los Angeles County Code (Zoning Ordinance) does not specifically list WTFs, the Department of Regional Planning has determined that WTFs are similar to radio and television towers. Radio and television towers require a CUP in all zones in which they are allowed, therefore, WTFs also require a CUP.

6. The Department of Public Works, who has jurisdiction over the flood control basin, submitted correspondence dated January 26, 2010 stating the Department reviewed the WTF proposal and had no objections.

7. The Altadena Town Council submitted a letter dated May 7, 2010 stating the Council recommends approval of the project with a condition to screen fencing with landscaping.

8. The maximum allowable height in the R-1 Zone and Altadena CSD is 35 feet. However, per Section 22.56.200, of the Zoning Ordinance, a conditional use permit shall specify the appropriate height limit for structures. The Commission finds that the 100 foot tall telecommunications tower is appropriate because it is disguised as a pine tree.

9. The .84 acre subject property is adequate in size and shape to accommodate the development. The facility is set back from the front property line approximately 32 feet which is in compliance with the 20 foot requirement. The rear and side yards are also in compliance. One parking space for maintenance vehicles is required and provided. The site can accommodate the landscaping required to provide screening. The project uses 324 square feet of the 0.84 acre property and therefore the site provides sufficient room for the development and operation of the WTF.

10. The subject property is adequately served by public and private service facilities as necessary. Although public water and sewer service is provided to the site, the WTF is unmanned and requires minimal maintenance visits. Therefore, the project does not require sewer or water service.

11. The subject property is adequately served by highways and streets of sufficient width and improved as necessary to carry the kind and quantity of traffic associated with this project. The site is served by Loma Alta Drive, which is a fully improved road. The facility will generate approximately one maintenance vehicle trip per month, which Loma Alta Drive can accommodate.

12. The proposed design is appropriate for the site and area because it is camouflaged as a pine tree and located near other similar trees that will help conceal it. Also the equipment area will be screened by landscaping.

13. A WTF will not adversely affect the health, peace, comfort, or welfare of persons residing or working in the surrounding area, will not be materially detrimental to the use, enjoyment, or valuation of property of other persons located in the vicinity of the site, and will not jeopardize, endanger, or otherwise constitute a menace to the public health, safety or general welfare because a disguised WTF will not create noise, pollution, crime, hazardous situations or be visually obtrusive.

14. Seven opponents to the project cited concerns about inadequate environmental review, health impacts, fire hazards, wildlife, site selection, aesthetics, property values, and conflict of interest because County owns site. Thirty-six proponents support the project because the facility will improve cell-phone reception in the area, which the supporters explain is lacking in the area.

15. The proposed project is eligible for a Class 3 Categorical Exemption from California Environmental Quality Act ("CEQA"), pursuant to Section 15303 of the CEQA Guidelines, because it involves the new construction of a small structure.

16. The subject property is surrounded by single-family residences on all sides.
17. The WTF shall be removed if not in use for more than six months.
18. Pursuant to the provisions of Sections 22.60.174 and 22.60.175 of the County Code, the community was appropriately notified of the public hearing by mail, newspaper and property posting.
19. To assure continued compatibility between the use of the subject property allowed by this grant and surrounding land uses, the Regional Planning Commission determines that it is necessary to limit the term of the grant to 15 years and require eight inspections over that time period.
20. The location of the documents and other materials constituting the record of proceedings upon which the Regional Planning Commission's decision is based in this matter is at the Los Angeles County Department of Regional Planning, 13th Floor, Hall of Records, 320 West Temple Street, Los Angeles, CA 90012. The custodian of such documents and materials shall be the Section Head of the Zoning Permits 1 Section, Los Angeles County Department of Regional Planning.

BASED ON THE FOREGOING, THE REGIONAL PLANNING COMMISSION CONCLUDES:

A. That the proposed use is consistent with the adopted general plan for the area; and

B. That the requested use at the proposed location will not adversely affect the health, peace, comfort, or welfare of persons residing or working in the surrounding area, will not be materially detrimental to the use, enjoyment, or valuation of property of other persons located in the vicinity of the site, and will not jeopardize, endanger, or otherwise constitute a menace to the public health, safety or general welfare; and

C. That the proposed site is adequate in size and shape to accommodate the yards, walls, fences, parking and loading facilities, landscaping and other development features prescribed in this title, or as is otherwise required in order to integrate said use with the uses in the surrounding area; and

D. That the proposed site is adequately served by highways or streets of sufficient width and improved as necessary to carry the kind and quantity of traffic such use would generate, and by other public or private service facilities as are required.

Therefore, the information submitted by the applicant and presented at the public hearing substantiates the required findings and burden of proof for a conditional use permit as set forth in Section 22.56.040 of the Los Angeles County Code.

ACTION

1. We have considered the Class 3 Categorical Exemption for this project and determined that the project is within the class of projects that does not have a significant effect on the environment.

2. In view of the findings of fact and conclusions presented above, Conditional Use Permit 201000014 is **APPROVED,** subject to the attached conditions.

VOTE
Concurring:

Dissenting:

Abstaining:

Absent:

Action Date: February 9, 2011

Copy: Each Commissioner and Building and Safety

1. This grant authorizes the construction, operation and maintenance of a wireless telecommunications facility that includes: a 100 foot tall monopine; nine panel antennas mounted at 95 feet high (as measured to the top of the antennas); four equipment cabinets and other related equipment located in a 324 square-foot lease area.

2. Unless otherwise apparent from the context, the term "permittee" shall include the applicant and any other person, corporation, or other entity making use of this grant.

3. This grant shall not be effective for any purpose until the permittee, and the owner of the subject property if other than the permittee, have filed at the office of the Los Angeles County ("County") Department of Regional Planning ("Regional Planning") their affidavit stating that they are aware of and agree to accept all of the conditions of this grant and that the conditions of the grant have been recorded as required by Condition 7, and until all required monies have been paid pursuant to Condition 10. The recorded affidavit shall be filed and the required monies shall be paid by **April 10, 2011**. Notwithstanding the foregoing, this Condition No. 3 and Condition Nos. 4, 5, and 9 shall be effective immediately upon the date of final approval of this grant by the County. The date of final approval is the dates the County's action becomes effective pursuant to Section 22.60.260 of the County Code.

4. The permittee shall defend, indemnify, and hold harmless the County, its agents, officers, and employees from any claim, action, or proceeding against the County or its agents, officers, or employees to attack, set aside, void, or annul this permit approval, which action is brought within the applicable time period of Government Code Section 65009. The County shall promptly notify the permittee of any claim, action, or proceeding and the County shall cooperate fully in the defense. If the County fails to promptly notify the permittee of any claim action or proceeding, or if the County fails to cooperate fully in the defense, the permittee shall not thereafter be responsible to defend, indemnify, or hold harmless the County.

5. In the event that any claim, action, or proceeding as described above is filed against the County, the permittee shall within ten days of the filing pay the Department of Regional Planning an initial deposit of $5,000, from which actual costs shall be billed and deducted for the purpose of defraying the expenses involved in the department's cooperation in the defense, including but not limited to, depositions, testimony, and other assistance to permittee or permittee's counsel. The permittee shall also pay the following supplemental deposits, from which actual costs shall be billed and deducted:

   a. If during the litigation process, actual costs incurred reach 80 percent of the amount on deposit, the permittee shall deposit additional funds sufficient to bring the balance up to the amount of the initial deposit. There is no limit to the number of supplemental deposits that may be required prior to completion of the litigation.

   b. At the sole discretion of the permittee, the amount of an initial or supplemental deposit may exceed the minimum amounts defined herein.

   The cost for collection and duplication of records and other related documents will be paid by the permittee according to Los Angeles County Code Section 2.170.010.

6. If any material provision of this grant is held or declared to be invalid by a court of competent jurisdiction, the permit shall be void and the privileges granted hereunder shall lapse.

7. Prior to the use of this grant, the permittee, or the owner of the subject property if other than the permittee, shall **record the terms and conditions** of the grant in the office of the

County Recorder. In addition, upon any transfer or lease of the property during the term of this grant, the permittee, or the owner of the subject property if other than the permittee, shall promptly provide a copy of the grant and its conditions to the transferee or lessee of the subject property.

8. **This grant shall terminate on February 9, 2026**. Entitlement to use of the property thereafter shall be subject to the regulations then in effect. If the permittee intends to continue operations after such date, whether or not the permittee proposes any modifications to the use at that time, the permittee shall file a new Conditional Use Permit application with Regional Planning, or shall otherwise comply with the application requirements at that time. Such application shall be filed at least 6 months prior to the expiration of this grant and shall be accompanied by the required fee. In the even that the permittee seeks to discontinue or otherwise change the use, notice is hereby given that the use of such property may require additional or different permits and would be subject to then-applicable regulations.

9. This grant shall expire unless used within two years from the date of final approval of the grant by the County. A single one-year time extension may be requested in writing and with the payment of the applicable fee prior to such expiration date.

10. The subject property shall be maintained and operated in full compliance with the conditions of this grant and any law, statute, ordinance, or other regulation applicable to any development or activity on the subject property. Failure of the permittee to cease any development or activity not in full compliance shall be a violation of these conditions. Inspections shall be made to ensure compliance with the conditions of this grant as well as to ensure that any development undertaken on the subject property is in accordance with the approved site plan on file. The permittee shall deposit with the County of Los Angeles the sum of **$1,600.00**. The deposit shall be placed in a performance fund, which shall be used exclusively to compensate Regional Planning for all expenses incurred while inspecting the premises to determine the permittee's compliance with the conditions of approval. The deposit provides for **eight (8) biennial (one every other year)** inspections. Inspections shall be unannounced.

    If additional inspections are required to ensure compliance with the conditions of this grant, or if any inspection discloses that the subject property is being used in violation of any one of the conditions of this grant, the permittee shall be financially responsible and shall reimburse Regional Planning for all additional enforcement efforts necessary to bring the subject property into compliance. The amount charged for additional inspections shall be $200.00 per inspection, or the current recovery cost at the time any additional inspections are required, whichever is greater.

11. Notice is hereby given that any person violating a provision of this grant is guilty of a misdemeanor. Notice is further given that the Regional Planning Commission or a hearing officer may, after conducting a public hearing, revoke or modify this grant, if the Commission or hearing officer finds that these conditions have been violated or that this grant has been exercised so as to be detrimental to the public's health or safety or so as to be a nuisance.

12. Upon receipt of this letter, the permittee shall contact the Fire Prevention Bureau of the Los Angeles County Fire Department to determine what facilities may be necessary to protect the property from fire hazard. Any necessary facilities shall be provided as may be required by said Department.

13. All requirements of the Zoning Ordinance and of the specific zoning of the subject property must be complied with unless otherwise modified as set forth in these conditions or as shown on the approved plans.

14. All structures, walls and fences open to public view shall remain free of graffiti or other extraneous markings, drawings or signage that was not approved by Regional Planning. These shall include any of the above that do not directly relate to any business that may being operated on the premises or that do not provide pertinent information about said premises.

    In the event of graffiti or other extraneous markings occurring, the permittee shall remove or cover said markings, drawings, or signage within 24 hours of such occurrence, weather permitting. Paint utilized in covering such markings shall be of a color that matches, as closely as possible, the color of the adjacent surfaces.

15. The facility shall be operated in accordance with regulations of the California Public Utilities Commission.

16. Upon completion of construction of the facility, the permittee shall submit to the Zoning Enforcement Section of Regional Planning written certification that the radio frequency electromagnetic emissions levels comply with adopted Federal Communications Commission (FCC) limitations for general population/uncontrolled exposure to such emissions when operating at full strength and capacity. If other WTFs are located on the subject property or on adjacent parcels, the aforementioned report shall include the radio frequency electromagnetic emissions of said WTFs.

17. Insofar as is feasible, the operator shall cooperate with any subsequent applicants for wireless communications facilities in the vicinity with regard to possible co-location. Such subsequent applicants will be subject to the regulations in effect at that time.

18. Any proposed WTF that will be co-locating on the proposed facility will be required to submit the same written verification of emissions and include the cumulative radiation and emissions of all such facilities to the Zoning Enforcement Section of the Department of Regional Planning.

19. All structures shall conform to the requirements of the Division of Building and Safety of the County Department of Public Works or other appropriate agency and obtain an encroachment permit if deemed necessary.

20. External lighting, including security lighting, within the leased area shall be on motion sensors, be of low intensity, be fully shielded, and be directed away from any adjacent residences. Antenna lighting shall be prohibited. Beacon lights shall be prohibited unless required by the FAA.

21. Construction and maintenance of the facility shall be limited to the hours of 9:00 AM to 5:00 PM, Monday through Friday. Emergency repairs of the facility may occur at any time.

22. The project shall be developed and maintained in substantial compliance with the approved plans marked Exhibit "A". Placement and height of all pole-mounted equipment shall be in substantial conformance with that shown on said Exhibit "A". The facility shall be built as depicted in the photo simulations presented at the public hearing. If changes to the site plan are required as a result of instruction given at the public hearing, three copies of a Revised Exhibit "A" shall be submitted to Regional Planning within 60 days of the date of final approval of this grant.

23. The permittee shall provide one parking space for maintenance vehicles as shown on the approved Exhibit "A". The space does not have to be dedicated solely to maintenance vehicles. Maintenance vehicles shall not block access to driveways or garages.
24. The maximum height of the facility shall not exceed 100 feet above finished grade.
25. Within 30 days of change in service provider ownership, the permittee shall provide the Zoning Enforcement Section of Regional Planning the name and contact information of the new service provider owner.
26. The permittee shall maintain the facility in good condition and repair, and shall ensure that the facility remain free of: general dirt and grease; chipped, faded, peeling or cracked paint; trash, debris, litter, graffiti and other forms of vandalism; cracks, dents, blemishes and discolorations; visible rust or corrosion on any unpainted metal areas. The permittee shall repair any damage from any cause within 30 days of notice by the Department of Regional Planning. The permittee shall maintain and/or replace weathered, faded or missing parts/materials used to disguise/camouflage the facility within 30 days of notice by the Department of Regional Planning.
27. Upon request, the permittee/operator shall promptly submit annual reports to the Zoning Enforcement Section of Regional Planning to show compliance with the maintenance and removal conditions.
28. The Regional Planning project number, CUP number, and lease holder contact information shall be prominently displayed on the facility where it can be easily viewed at or near eye level.
29. The facility shall be secured by fencing, gates and/or locks. All fencing or walls used for screening or securing the facility shall be composed of wood, vinyl, stone, concrete, stucco or wrought iron. Chain links, chain link with slats, barbed and other types of wire fencing are prohibited. Landscaping in a minimum planter width of five feet, shall be provided to screen facility fencing or walls from the street.
30. New equipment added to the facility shall not compromise the stealth design of the facility.
31. Antennas shall be painted or covered to match their background (branches or trunk). The antennas shall not extend beyond the monotree branches or fronds. There shall be ample branch coverage to hide the antennas from view as effectively as possible. Faux bark cladding shall be provided from the ground to five feet beyond where the faux branches begin; above the faux bark shall be flat non-reflective brown paint to match the bark.

MC:de

1/27/2011

Attachments: Photo Simulation(s)

WTF HEARING PACKAGE

PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014

HEARING DATE
December 7, 2010
ITEM
3
CONTINUED TO

HEARING OFFICER: Alex Garcia

CONTENTS

1. Staff Report
2. Draft Findings
3. Draft Conditions
4. Burden of Proof Statement(s)
5. Alternative Site Analysis
6. DPW Comments
7. Public Correspondence
8. Property Location Map

PREPARED BY: Dean Edwards, Zoning Permits 1
(213) 974-6443, ComLine 288, dedwards@planning.lacounty.gov

REVIEWED BY: Mark Child

STAFF REPORT
PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014

REQUEST
The applicant, AT&T Wireless, is requesting a conditional use permit to authorize the construction, operation and maintenance of a wireless telecommunications facility (WTF), a use that is subject to permit.

REPRESENTATIVE: Kathy Phelps **OWNER:** Los Angeles County Flood Control District

PROJECT DESCRIPTION
The proposed project consists of the construction of a WTF that includes a 100 foot tall monopine, nine panel antennas mounted at 95 feet high (as measured to the top of the antennas). Four equipment cabinets and other related equipment will be located in the 324 square-foot lease area. The site plans depicts another 300 square foot lease area for another carrier that will co-locate on the facility in the future. The lease areas will be enclosed by wrought iron fencing with landscaping concealing the fencing on the west, south and east sides. One parking space for maintenance vehicles is provided. Access to the facility is off of Loma Alta Drive.

LOCATION
The subject property is located at 147 East Loma Alta Drive in the unincorporated community of Altadena and Altadena Zoned District.

Assessor's Parcel Number(s): 5831-014-902

Altadena Community General Plan Land Use Designation: Flood Control Facilities

Zoning: R-1-10,000 (Single-family Residence)

Community Standards District (CSD): Altadena

SITE DESCRIPTION
The .84 acre subject property is developed with flood control facilities. The drainage area is flanked by a paved pathway to the west and a concrete ditch to the east. The south east side property is landscaped with trees. The perimeter of the property is secured with chain link fencing.

ENVIRONMENTAL DETERMINATION
The subject property is not located in a Significant Ecological Area or Ecologically Sensitive Habitat Area. The proposed project is eligible for a Class 3 (New Construction or Conversion of Small Structures) Categorical Exemption from California Environmental Quality Act reporting requirements.

PREVIOUS CASE/ZONING HISTORY
Request for Service: Is not necessary for Zoning Enforcement to inspect County owned property for Zoning Ordinance compliance.

OTHER DEPARTMENT COMMENTS
The Department of Public Works' correspondence (attached) dated January 26, 2010 states that The Department reviewed the WTF proposal and had no objections.

PUBLIC COMMENTS

The Altadena Town Council submitted a letter (attached) dated May 7, 2010 stating the Council recommends approval of the project with a condition to screen fencing with landscaping.

ANALYSIS

The policies and guidelines of Subdivision and Zoning Ordinance Memo 01-2010 do not apply to this case because the application was deemed complete on February 9, 2010 which is before the July 26, 2010 memo date.

Height

The maximum allowable height in the R-1 Zone and Altadena CSD is 35 feet. The CSD height limit may be modified by a conditional use permit. Therefore, Staff recommends that the maximum allowable height for the proposed facility at the proposed location be modified by the Hearing Officer to 100 feet.

Aesthetics/Visual Impact

The subject property is surrounded by single-family residences.

Because the pole and antennas will be disguised as a tree, the ground equipment will be screened with landscaping and the facility will be located in a grove of mature trees, the facility should not have significant adverse visual impact on the surrounding neighborhood/area.

RECOMMENDATION

Staff recommends **APPROVAL** of Conditional Use Permit 201000014 with a grant term of 15 years and biennial inspections because:

- There are no known zoning violations on the property.
- The Department of Public Works supports the project.
- The Altadena Town Council supports the project.
- To date, there is no opposition to the project.
- With a conditional use permit, the proposed facility will comply with Zoning Ordinance height restrictions.
- The facility should not have a significant adverse visual impact on the surrounding neighborhood because it is designed and conditioned to be visually unobtrusive.

DRAFT FINDINGS AND ORDER OF THE HEARING OFFICER
COUNTY OF LOS ANGELES

PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014

REQUEST

The applicant, AT&T Wireless, is requesting a conditional use permit to authorize the construction, operation and maintenance of a wireless telecommunications facility (WTF), a use that is subject to permit.

HEARING DATE: December 7, 2010

FINDINGS

1. The proposed project consists of the construction of a WTF that includes a 100 foot tall monopine, nine panel antennas mounted at 95 feet high (as measured to the top of the antennas). Four equipment cabinets and other related equipment will be located in the 324 square-foot lease area. The site plans depicts another 300 square foot lease area for another carrier that will co-locate on the facility in the future. The lease areas will be enclosed by wrought iron fencing with landscaping concealing the fencing on the west, south and east sides. One parking space for maintenance vehicles is provided. Access to the facility is off of Loma Alta Drive.
2. The subject property is located at 147 East Loma Alta Drive in the unincorporated community of Altadena and Altadena Zoned District.
3. The .84 acre subject property is developed with flood control facilities. The drainage area is flanked by a paved pathway to the west and a concrete ditch to the east. The south east side property is landscaped with trees. The perimeter of the property is secured with chain link fencing.
4. Four other sites within 1.9 miles of the subject property were considered by the applicant and deemed infeasible.
5. The Altadena Community General Plan land use designation of the subject property is Flood Control Facilities. There are no policies in the Plan that specifically prohibit, discourage or limit the use of WTFs. The proposed project is consistent with the Altadena Community General Plan.
6. Title 22 of the Los Angeles County Code (Zoning Ordinance) does not specify WTF as a use. Similar uses, such as radio/television stations/towers, are subject to permit.
7. The Department of Public Works' correspondence dated January 26, 2010 states that The Department reviewed the WTF proposal and had no objections.
8. The Altadena Town Council submitted a letter dated May 7, 2010 stating the Council recommends approval of the project with a condition to screen fencing with landscaping.
9. The maximum allowable height in the R-1 Zone and Altadena CSD is 35 feet. The CSD height limit may be modified by a conditional use permit.
10. The subject property is surrounded by single-family residences.
11. Because the pole and antennas will be disguised as a tree, the ground equipment will be screened with landscaping and the facility will be located in a grove of mature trees, the facility should not have significant adverse visual impact on the surrounding neighborhood/area.

12. Pursuant to the provisions of Sections 22.60.174 and 22.60.175 of the County Code, the community was appropriately notified of the public hearing by mail, newspaper and property posting.

13. To assure continued compatibility between the use of the subject property allowed by this grant and surrounding land uses, the Hearing Officer determines that it is necessary to limit the term of the grant to 15 years and require eight inspections.

14. The location of the documents and other materials constituting the record of proceedings upon which the Hearing Officer's decision is based in this matter is at the Los Angeles County Department of Regional Planning, 13th Floor, Hall of Records, 320 West Temple Street, Los Angeles, CA 90012. The custodian of such documents and materials shall be the Section Head of the Zoning Permits 1 Section, Los Angeles County Department of Regional Planning.

BASED ON THE FOREGOING, THE HEARING OFFICER CONCLUDES:

A. That the proposed use is consistent with the adopted general plan for the area; and

B. That the requested use at the proposed location will not adversely affect the health, peace, comfort, or welfare of persons residing or working in the surrounding area, will not be materially detrimental to the use, enjoyment, or valuation of property of other persons located in the vicinity of the site, and will not jeopardize, endanger, or otherwise constitute a menace to the public health, safety or general welfare; and

C. That the proposed site is adequate in size and shape to accommodate the development features prescribed in Title 22 of the County Code, or as is otherwise required in order to integrate said use with the uses in the surrounding area; and

D. That the proposed site is adequately served by highways or streets of sufficient width and improved as necessary to carry the kind and quantity of traffic such use would generate, and by other public or private service facilities as are required.

Therefore, the information submitted by the applicant and presented at the public hearing substantiates the required findings and burden of proof for a conditional use permit as set forth in Section 22.56.040 of the Los Angeles County Code.

HEARING OFFICER ACTION

1. I have considered the Categorical Exemption for this project and certify that it is consistent with the finding by the State Secretary for Resources or by local guidelines that this class of projects does not have a significant effect on the environment.

2. In view of the findings of fact and conclusions presented above, Conditional Use Permit 201000014 is **APPROVED,** subject to the attached conditions.

c: Hearing Officer, Zoning Enforcement, Building and Safety

MC:de

November 22, 2010

This grant authorizes the construction, operation and maintenance of a wireless telecommunications facility (WTF), subject to the following conditions of approval:

1. Unless otherwise apparent from the context, the term "permittee" shall include the applicant and any other person, corporation or other entity making use of this grant.

2. This grant shall not be effective for any purpose until the permittee, and the owner of the subject property if other than the permittee, have filed at the office of the Department of Regional Planning their affidavit stating that they are aware of and agree to accept all of the conditions of this grant, and that the conditions of the grant have been recorded as required by Condition 6, and until all required monies have been paid pursuant to Condition 9. The recorded affidavit shall be filed and the required monies shall be paid by **February 7, 2011**.

3. The permittee shall defend, indemnify and hold harmless the County, its agents, officers, and employees from any claim, action, or proceeding against the County or its agents, officers, or employees to attack, set aside, void or annul this permit approval, which action is brought within the applicable time period of Government Code Section 65009. The County shall promptly notify the permittee of any claim, action, or proceeding and the County shall cooperate reasonably in the defense. If the County fails to promptly notify the permittee of any claim action or proceeding, or if the County fails to cooperate fully in the defense, the permittee shall not thereafter be responsible to defend, indemnify, or hold harmless the County.

4. In the event that any claim, action, or proceeding as described above is filed against the County, the permittee shall within ten days of the filing pay the Department of Regional Planning an initial deposit of $5,000, from which actual costs shall be billed and deducted for the purpose of defraying the expenses involved in the department's cooperation in the defense, including but not limited to, depositions, testimony, and other assistance to permittee or permittee's counsel. The permittee shall also pay the following supplemental deposits, from which actual costs shall be billed and deducted:

   a. If during the litigation process, actual costs incurred reach 80 percent of the amount on deposit, the permittee shall deposit additional funds sufficient to bring the balance up to the amount of the initial deposit. There is no limit to the number of supplemental deposits that may be required prior to completion of the litigation.

   b. At the sole discretion of the permittee, the amount of an initial or supplemental deposit may exceed the minimum amounts defined herein.

   The cost for collection and duplication of records and other related documents will be paid by the permittee according to Los Angeles County Code Section 2.170.010.

5. If any provision of this grant is held or declared to be invalid, the permit shall be void and the privileges granted hereunder shall lapse.

6. Prior to the use of this grant, the property owner or permittee shall **record the terms and conditions** of the grant in the office of the County Recorder. In addition, upon any transfer or lease of the property during the term of this grant, the property owner or permittee shall promptly provide a copy of the grant and its conditions to the transferee or lessee of the subject property.

7. **This grant will terminate on December 7, 2025**. Entitlement to use of the property thereafter shall be subject to the regulations then in effect. At least six (6) months prior to the expiration of this permit and in the event that the permittee intends to continue operations after such date, a new conditional use permit application shall be filed with the

Department of Regional Planning. The application shall be a request for continuance of the use permitted under this grant, whether including or not including modification to the use at that time.

8. This grant shall expire unless used within two years from the date of final approval by the County. The date of final approval is the date of the approval action plus any applicable appeal period. A single one-year time extension may be requested in writing and with the payment of the applicable fee prior to such expiration date.

9. The subject property shall be maintained and operated in full compliance with the conditions of this grant and any law, statute, ordinance, or other regulation applicable to any development or activity on the subject property. Failure of the permittee to cease any development or activity not in full compliance shall be a violation of these conditions. The permittee shall deposit with the County of Los Angeles the sum of **$1,600.00**. The deposit shall be placed in a performance fund, which shall be used exclusively to compensate the Department of Regional Planning for all expenses incurred while inspecting the premises to determine the permittee's compliance with the conditions of approval. The deposit provides for **eight (8) biennial (one every other year)** inspections. Inspections shall be unannounced.

   If additional inspections are required to ensure compliance with the conditions of this grant, or if any inspection discloses that the subject property is being used in violation of any one of the conditions of this grant, the permittee shall be financially responsible and shall reimburse the Department of Regional Planning for all additional enforcement efforts necessary to bring the subject property into compliance. Inspections shall be made to ensure compliance with the conditions of this grant as well as adherence to development in accordance with the approved site plan on file. The amount charged for additional inspections shall be $200.00 per inspection, or the current recovery cost, whichever is greater.

10. Notice is hereby given that any person violating a provision of this grant is guilty of a misdemeanor. Notice is further given that the Regional Planning Commission or a hearing officer may, after conducting a public hearing, revoke or modify this grant, if the Commission or hearing officer finds that these conditions have been violated or that this grant has been exercised so as to be detrimental to the public's health or safety or so as to be a nuisance.

11. Upon receipt of this letter, the permittee shall contact the Fire Prevention Bureau of the Los Angeles County Fire Department to determine what facilities may be necessary to protect the property from fire hazard. Any necessary facilities shall be provided as may be required by said Department.

12. All requirements of the Zoning Ordinance and of the specific zoning of the subject property must be complied with unless otherwise set forth in these conditions or shown on the approved plans.

14. All structures, walls and fences open to public view shall remain free of extraneous markings, drawings or signage that was not approved by the Department of Regional Planning. These shall include any of the above that do not directly relate to any business that may being operated on the premises or that do not provide pertinent information about said premises.

15. The facility shall be operated in accordance with regulations of the State Public Utilities Commission.

16. Upon completion of construction of the facility, the permittee shall submit to the Zoning Enforcement Section of the Department of Regional Planning written certification that the radio frequency electromagnetic emissions levels comply with adopted Federal Communications Commission (FCC) limitations for general population/uncontrolled exposure to such emissions when operating at full strength and capacity. If other WTFs are located on the subject property or on adjacent parcels, the aforementioned report shall include the radio frequency electromagnetic emissions of said WTFs.

17. Insofar as is feasible, the operator shall cooperate with any subsequent applicants for wireless communications facilities in the vicinity with regard to possible co-location. Such subsequent applicants will be subject to the regulations in effect at that time.

18. Any proposed WTF that will be co-locating on the proposed facility will be required to submit the same written verification of emissions and include the cumulative radiation and emissions of all such facilities to the Zoning Enforcement Section of the Department of Regional Planning.

19. All structures shall conform to the requirements of the Division of Building and Safety of the Department of Public Works or other appropriate agency and obtain an encroachment permit if deemed necessary.

20. External lighting, including security lighting, shall be on motion sensors, be of low intensity, fully shielded and directed away from any adjacent residences. Pole mounted lighting is prohibited on the leasehold unless the facility is disguised as a light pole. Antenna lighting is prohibited. Beacon lights are prohibited unless required by the FAA.

21. If the subject property is adjacent to residences, construction and maintenance of the facility shall be limited to the hours of 9:00 AM to 5:00 PM, Monday through Friday. Emergency repairs of the facility may occur at any time.

22. The project shall be developed and maintained in substantial compliance with the approved plans marked Exhibit "A". Placement and height of all pole mounted equipment shall be in substantial conformance with that shown on said Exhibit "A". The facility shall be built as depicted in the photo simulations presented at the public hearing.

23. One parking space for maintenance vehicles shall be provided. The space does not have to be dedicated solely to maintenance vehicles. Maintenance vehicles shall not block access to driveways or garages.

24. The maximum height of the facility shall not exceed 100 feet above finished grade.

25. Within 30 days of change in service provider ownership, the permittee shall provide the Zoning Enforcement Section of the Department of Regional Planning the name and contact information of the new property owner.

26. The finished surface of the facility shall not be glossy or reflective in nature unless such finish is necessary to blend into existing design features. The finish shall be graffiti-resistant and shall have a color that blends in with the immediately surrounding environment.

27. The facility shall be maintained in good condition and repair, and shall remain free of: general dirt and grease; chipped, faded, peeling or cracked paint; trash, debris, litter, graffiti and other forms of vandalism; cracks, dents, blemishes and discolorations; visible rust or corrosion on any unpainted metal areas. Any damage from any cause shall be repaired within 30 days of notice. Weathered, faded or missing parts/materials used to disguise/camouflage the facility shall be maintained and/or replaced within 30 days of

notice. Any and all graffiti shall be removed by the operator or property owner within 48 hours. Provided landscaping shall be maintained at all times and shall be promptly replaced if needed.

28. Upon request, the permittee/operator shall submit annual reports to the Zoning Enforcement Section of the Department of Regional Planning to show compliance with the maintenance and removal conditions.

29. The Department of Regional Planning project number, conditional use permit number and lease holder contact information shall be prominently displayed on the facility where it can be easily viewed at or near eye level.

30. The facility shall be secured by fencing, gates and/or locks. All fencing or walls used for screening or securing the facility shall be composed of wood, vinyl, stone, concrete, stucco or wrought iron. Chain links, chain link with slats, barbed and other types of wire fencing are prohibited. If the facility's fences or walls are visible from the public right-of-way, landscaping, in a minimum planter width of five feet, shall be provided to screen the fence or wall from the street.

31. New equipment added to the facility shall not compromise the stealth design of the facility.

32. Antennas shall be painted or covered to match their background (branches or trunk). The antennas shall not extend beyond the monotree branches or fronds. There shall be ample branch coverage to hide the antennas from view as effectively as possible. Faux bark cladding shall be provided from the ground to five feet beyond where the faux branches begin; above the faux bark shall be flat non-reflective brown paint to match the bark.

MC:de

11/18/2010

Attachments: Photo Simulation(s)

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

CONDITIONAL USE PERMIT BURDEN OF PROOF

Pursuant to Zoning Code Section 22.56.040, the applicant shall substantiate the following: (see attached)

(Do not repeat the statement or provide Yes/No responses. If necessary, attach additional pages.)

A. That the requested use at the location will not:
1. Adversely affect the health, peace, comfort or welfare of persons residing or working in the surrounding area, or
2. Be materially detrimental to the use, enjoyment or valuation of property of other persons located in the vicinity of the site, or
3. Jeopardize, endanger or otherwise constitute a menace to the public health, safety or general welfare.

See attached.

B. That the proposed site is adequate in size and shape to accommodate the yards, walls, fences, parking and loading facilities, landscaping and other development features prescribed in this Title 22, or as is otherwise required in order to integrate said use with the uses in the surrounding area.

C. That the proposed site is adequately served:
1. By highways or streets of sufficient width, and improved as necessary to carry the kind and quantity of traffic such use would generate, and
2. By other public or private service facilities as are required.

CUP APPLICATION

for

Wireless Telecommunications Facility

At

147 E. Loma Alta Drive, Altadena CA 91001

SITE NAME: SV0160B / LA County Public Works

Applicant:
AT&T Mobility
12900 Park Plaza Drive
Cerritos, CA 90720

Applicant Representative:
BDI / Derra Design
Kathy O'Connor-Phelps
250 El Camino Real, Suite 216
Tustin, CA 92780
714.625.5930
Kathy.phelps@derradesign.com

Project Description

Introduction

AT&T Mobility Corporation is a registered public utility licensed and regulated by the Public Utilities Commission (PUC) and the Federal Communications Commission (FCC). As a public company, AT&T receives a license from the FCC to provide Personal Communication Services throughout the United States. AT&T utilizes an all-digital high frequency system that will operate between 1865 and 1870 MHz range to receive, and between 1945 and 1950 MHz to transmit.

Efforts are currently underway in the Altadena area to improve capacity and coverage within the AT&T existing wireless communications network.

Project Overview

The project will have a total lease area of 640 square feet. This will consist of a one hundred foot (100') stealthed monopine with a total of three (3) sectors with three (3) panel antennas on each sector. Total amount is nine (9) panel antennas at a ninety-three foot (93') centerline.

Related equipment will be within a 27' x 12' surrounded by an eight foot (8') high chain link fence with green slats. The equipment will consist of four (4) equipment cabinets, two (2) GPS antennas and related cables etc.

T-Mobile will also be collocating at this location. T-Mobile's lease area will be located next to AT&T's lease area within a 12' x 25' lease area. And T-Mobile's antennas will be at a eighty-three foot (83') centerline.

Operational Overview

The proposed communications facility will transmit at a frequency range between 1865 and 1950 MHz. A typical WTF operated on standard telephone lines and commercial electrical power.

The transmitted signals from the site will consist of non-ionizing waves generated at less than 1 W/cm2, which is significantly lower than the maximum allowable public exposure of 100 W/cm2 as set by the American National Standards Institute (ANSI) and Institute of Electrical and Electronic Engineers (IEEE). The current ANSI / IEEE standards for protection against radio frequency/microwave (RF/MW) fields are set at 50 times below a level that scientists believe may pose a health risk to human populations.

Overview of Coverage Objectives

Currently AT&T, as well as T-Mobile has minimal coverage in this area. The proposed monopine will enable the carriers' network engineers to expand the range of wireless services available to surrounding customers along Loma E. Alta Drive and the immediate area. Propagation maps are included illustrating the major improvement in coverage by AT&T's proposed project.

Overview of Site Design / Location Criteria

The network of AT&T wireless sites throughout the region is "locationally" dependent, meaning that there is a necessary and logical interrelationship between each site. AT&T deployment personnel have identified a location that will not only meet the technical objectives of RF engineering, but will also provide the best siting option with regard to other key criteria that include but not limited to: accessibility, utility connections, zoning compatibility, liability and risk assessment, site acquisition, maintenance, and construction costs. Furthermore, by co-locating on an existing WTF, eliminates the need for a brand new tower in the area.

BURDEN OF PROOF

Criteria A: That the requested use at the location will not:

1. **Adversely affect the health, peace, comfort or welfare of persons residing or working in the surrounding area.**

2. **Be materially detrimental to the use, enjoyment or valuation of property of other persons located in the vicinity of the site.**

3. **Jeopardize, endanger or otherwise constitute a menace to the public health, safety or general welfare.**

The unmanned facility will not create any unusual noise, traffic, or other conditions or situations that may affect the health, peace, comfort or welfare of persons residing or working in the surrounding area. The antennas and related equipment operates quietly or virtually noise free. It does not emit fumes, smoke, or odors that could be considered objectionable. The facility only requires periodic maintenance which equates to approximately one trip per month.

The unmanned facility will be stealthed as a monopine design, this provides a facility that is minimally visually intrusive and will not be materially detrimental to the use or enjoyment of one's property. The monopine is located in an area with many large trees so that the proposed facility will blend in with the landscape and go virtually unnoticed. As stated above the project will not create any additional noise or traffic. Furthermore, there is no evidence that property values go down due to wireless telecommunication facilities.

The unmanned facility will operate in full compliance with the U.S. standards for radio frequency emissions as published by the American National Standards Institute (ANSI) and therefore will not jeopardize, endanger or otherwise constitute a menace to the public health, safety, or general welfare. Data currently available on the effects of electromagnetic transmission on public health indicates that there is no likelihood of negative impacts to public health and safety.

The radio frequency emissions emitted by the proposed AT&T facility will fall within the portion of the electromagnetic spectrum that transmits non-ionizing electromagnetic emissions. At the low levels associated with this type of wireless technology, these emissions are not harmful to living cells. Everyday products that non-ionizing electromagnetic emissions include are radios, TV broadcasts, CB radios, microwave ovens and even common security systems.

The proposed project is actually a public necessity because it will dramatically improve existing AT&T coverage and capacity of the immediate vicinity especially in times of an emergency. Wireless telecommunication facilities have proven to be an invaluable communication tool in the event of an emergency or natural disaster. Cell site services are currently utilized by numerous governmental and quasi-governmental agencies that provide emergency services.

Criteria B: That the proposed site is adequate in size and shape to accommodate the yards, walls, fences, parking and loading facilities, landscaping and other development features prescribed in this Title 22, or as is otherwise required in order to integrate said use with the uses in the surrounding area.

The proposed site was picked by AT&T and various county employees due to the site being surrounded by trees to adequately minimize the public view of the facility. This location offers siting opportunities away from the public view and is there adequate in size and shape for the proposed project.

The lease area for both AT&T and T-Mobile will have a fence around the equipment. No other yards, walls, parking, or loading facilities as prescribed in Title 22 will be necessary. Furthermore, there is adequate landscaping surrounding the area which is one reason this location was chosen.

Criteria C: That the proposed site is adequately served:

1. **By highways or streets of sufficient width, and improved as necessary to carry the kind and quantity of traffic such use would generate, and**
2. **By other public or private service facilities as are requested**

As stated above the site is an unmanned facility and therefore will not generate any additional traffic nor are any public or private service facilities needed with the exception of power and telco which will be obtained on-site from already existing services near East Loma Alta Avenue.

Bemis Development, Inc.

250 El Camino Real Ste 216
Tustin, Ca. 92780
office: 714-730-0606 fax: 714-730-0642

DATE: OCTOBER 20, 2010

TO: MR. DEAN EDWARDS

FROM: KATHY O'CONNOR-PHELPS, ON BEHALF OF AT&T WIRELESS

RE: R2010-00090, ALTERNATE SITE ANALYSIS

The significant gap in coverage for both AT&T Wireless and T-Mobile is along Loma Alta Drive in Altadena as well as the residential neighborhoods to the west, northwest, and southwest. Unfortunately this coverage area consists almost entirely of residential homes, and finding an area that would meet the needs of both carriers (as well as future) as well as not visually impact the area was extremely difficult.

The first choice for AT&T was the Lincoln Water Tanks located at 3406 Fair Oaks Avenue (see attached aerial). The location was an excellent choice for AT&T in order to meet their coverage objective. Unfortunately the residents were not as receptive. As the project proceeded through the entitlements process it ran into major opposition, and with no support AT&T decided to withdraw their application. Eventually AT&T representatives, The Board of Supervisors, Los Angeles Public Works, and Altadena Neighborhood Advisory Board indicated that they were willing to support development of a site at the Los Angeles County basin located at 147 E. Loma Alta Drive (see aerial). All entities (even the neighbors) acknowledged that there is a significant gap in coverage and that the basin would be a much more desirable and suitable location due to the heavy screening of existing trees in the area.

I have investigated existing wireless telecommunications sites that may be located in the area for collocation opportunities. As stated above due to the residential nature of the area, existing sites are very few. Within ¼ mile radius, which is represented as a red circle on the aerial map, it appears that there are currently no existing sites. This site would be the first.

The existing site locations I found on-line are:

2270 North Lake Avenue:	No height was specified but it is believe to be a rooftop. This site is approximately 1.8 miles away from AT&T's proposed site.
2400 North Fair Oaks Avenue:	This is an AT&T site. 67 feet and located approximately 1.5 miles away.
2609 Lincoln Avenue:	This site is 60 feet and approximately 1.9 miles away.

AT&T's project will be fully co-locatable. Currently T-Mobile is also on the application and there could potentially be room for other carriers.

4-5-4


SV0160 AT&T
147 E Loma Alta Dr, Altadena, CA 91001
Former candidate:
Lincoln Water Tank
3406 Fair Oaks Ave
Chaney Trail
Alzada Dr
Leilani Way
Serena Ave
Taos Rd
Loma View Dr
W Loma Alta Dr
E Loma Alta Dr
Hollyslope Rd
Canon Blvd
Monterosa Dr
Cocopan Dr
Parkman St
N Marengo Ave
Alta Pine Dr
Sunset Dr
Mt Curve Ave
W Laurel Dr
Concha St
© 2010 Google
Google
Imagery Date Nov 15, 2009
34°12'14.33" N 118°08'25.58" W elev 1584 ft
Eye alt 6783 ft

From: Gomez, Richard [mailto:RGOMEZ@dpw.lacounty.gov]
Sent: Tuesday, January 26, 2010 9:20 AM
To: Estes, Phillip; pestef@planning.lacounty.gov
Subject: Fair Oaks Debris Basin - Altadena - Proposed Cell Tower

This is in regards to a proposed cell tower in Altadena. The site is referred to as the Fair Oaks Debris Basin and is owned and maintained by the Los Angeles County Flood Control District. We did a preliminary review of AT&T's proposal and had no objections to the proposal shown on their sketch. We therefore, do not have any objections to their submittal of a zoning application as it pertains to this proposal. For reference purposes, I've attached an email to show our preliminary approval response to the subject.

Please feel free to contact me if you have any questions.

Thanks,

Richard Gomez, PE
County of Los Angeles
Department of Public Works
Watershed Management Division
(626)458-4322

From: Grant, Terri [TGRANT@dpw.lacounty.gov]
Sent: Thursday, October 08, 2009 11:31 AM
To: Graham, Stephen; Hildebrand, Gary; Gomez, Richard
Cc: Paul Novak; George, Angela; Patty Mejia; Pestrella, Mark
Subject: RE: SV0160 Alatdena Drainage Basin Cell Site Sketch

Hello Stephen,

I'm responding Gary's behalf because he's out this week. We've reviewed your sketch and do not have any objections as long as the proposed cell tower and appurtenant structures are placed in the location shown on the plans. The improvements cannot be placed any further North-East on the site since our maintenance staff utilizes this area for cleanout and staging. In addition, we would also limit any additional fencing inside the site to allow for proper ingress and egress of our vehicles.

When you are ready to start your permit application and lease agreement with us, the following department personnel will be available to assist you:

Maryam Adhami 626-458-4940
Construction Division
Permits Section

Dayna Rothman 626-458-7072
Mapping and Property Management Division
Acquisition and Revenue Properties Section

When you are ready to commence the process, our staff would still like to meet with you at the site so you are familiar with the constraints mentioned above.

Please feel free to contact me or my staff if you have any further questions.

Thanks!
Terri Grant

ALTADENA TOWN COUNCIL

serving the Altadena community since 1975

www.altadenatowncouncil.org

730 East Altadena Drive • Altadena, California 91001

Mr. Richard Bruckner
Planning Director
Los Angeles County Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

May 7, 2010

Re: Project Number R2010-00090/CUP2010-00014
147 East Loma Alta Dr. Altadena, CA 91001
Applicant: BDI- Derra Design for AT&T Wireless

Dear Mr. Bruckner,

The Altadena Town Council resolved, at its April 20, 2010 meeting, to recommend the **APPROVAL** of the proposed 100 ft monopine cell tower and equipment cabinet at the above site, with the condition of enhanced landscaping and fence screening at the site to improve the aesthetic of the completed facility.

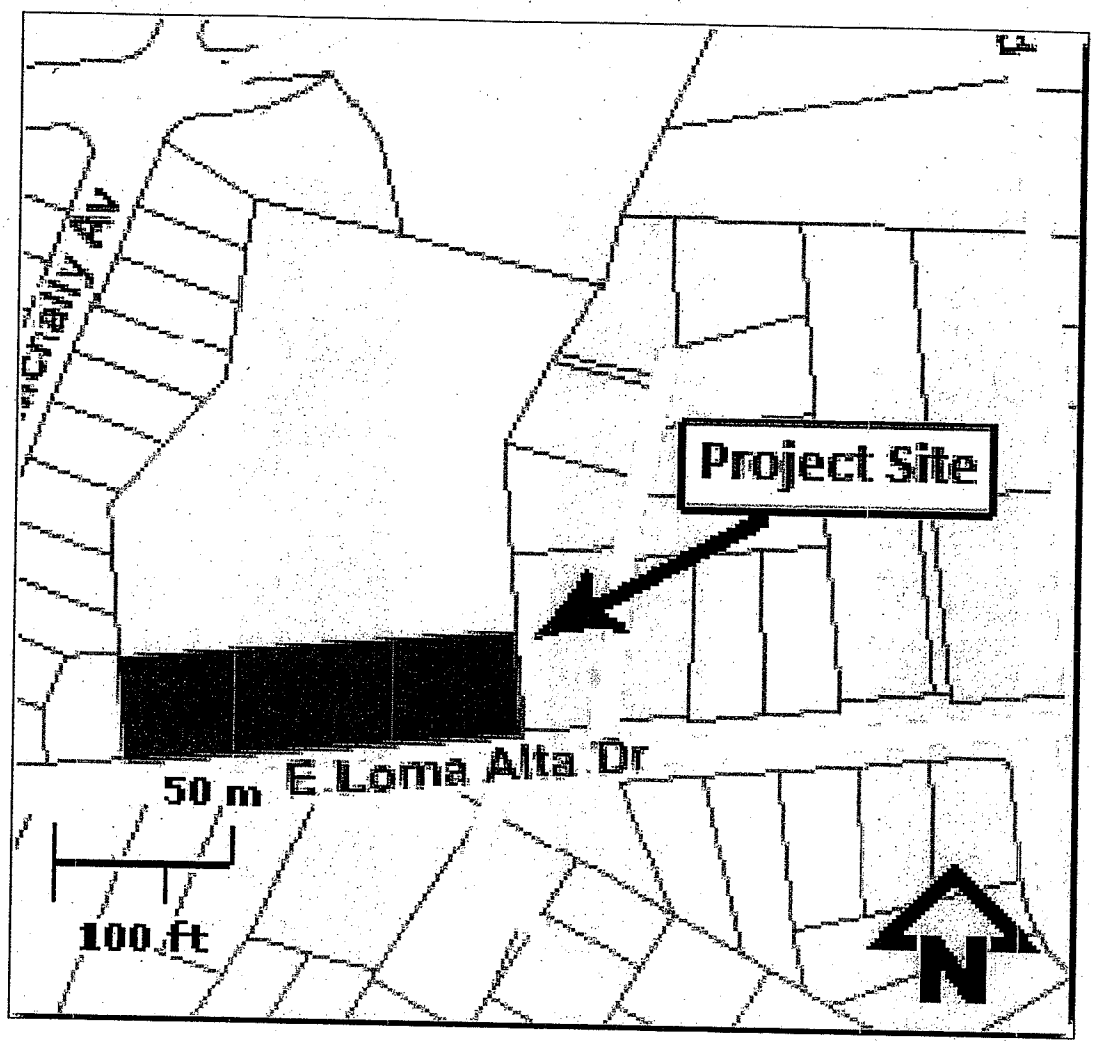
Thank you for your attention to this project.

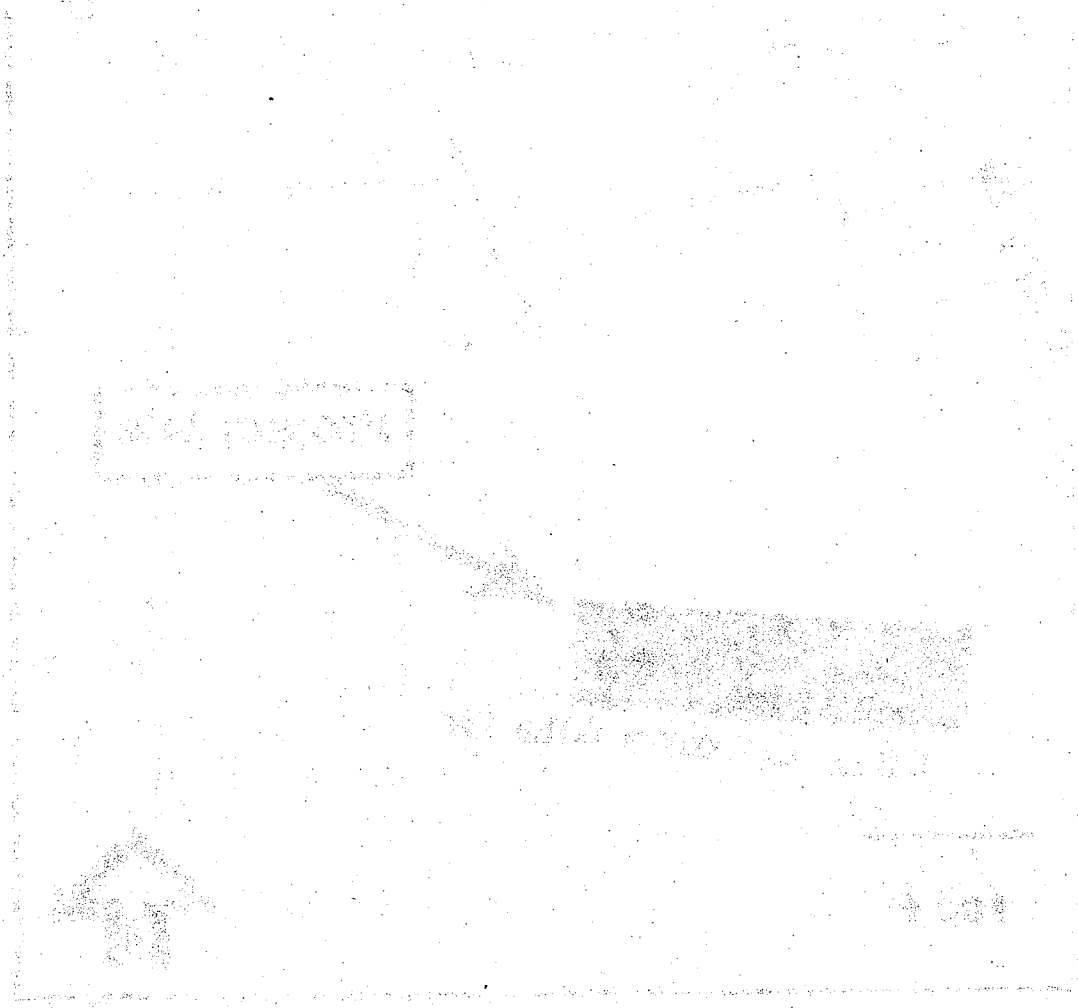
Sincerely,

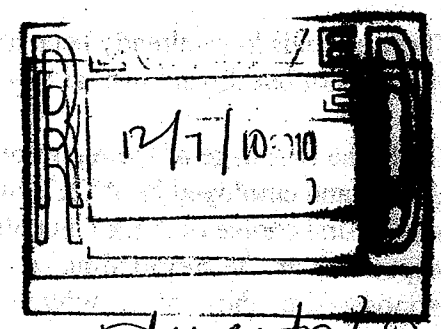
Gino Sund, Chairman
Altadena Town Council

MAY 11 2010

Cc: Ms. Sussy Nemer, Senior Deputy to Supervisor Antonovich
Mr. Paul Novak, Planning Deputy to Supervisor Anotnovich


Project Site
E Loma Alta Dr
50 m
100 ft
N





December 1, 2010

Mr. Alex Garcia, Hearing Officer
Zoning Enforcement
320 W. Temple, Room ~~320~~ 150
Los Angeles, Ca.
Tel (213)974-6483
FAX (213)217-5108

Re: permit(s) R2010-00090(5), RCUP201000014

I am writing to oppose the granting of a conditional use permit to install an unmanned telecommunications facility at 147 E. Loma Alta Dr. in Altadena, California.(Site Number SV0160B). I plan to attend the December 7, 2010 hearing to voice my opposition in person.

No community speaks with one voice and certainly not residents of independent-minded Altadena. I understand that the Altadena Town Council (none of whose members live on this street) and the residents of the Chaney Trail neighborhood (who are located almost a mile away and will not see the facility) have stated their approval of the proposed facility. I live on Loma Alta. I will see the facility from my house and yard. I do not approve of the proposal for the following reasons:

1. This is strictly a residential neighborhood. There are no commercial or industrial buildings on the street. There are single-family homes and beautiful recreational areas. Most of us moved to the neighborhood for its proximity to the natural setting that this area affords. Most of the blocks have no sidewalks. There is no way a 100 foot tower with nine antennae near the top can be disguised to look like one of the numerous pine and deodar trees in our yards. The aesthetics of the area will be altered and certainly not improved by the tower. There is a reason why the maximum allowable height in the R-1 zone and Altadena CSD is 35 feet. This waver that AT&T is asking for is triple that.

2. Despite the arguments of telecommunication companies, these towers have not been around long enough to know the long-term effects on people or wildlife. There is a diverse community of wildlife here, some species of birds and mammals that, in fact, may be bothered by sounds coming from the tower that humans cannot hear. Wildlife has proven to be most adaptable but in addition to eradication of their habitat, do they need a cell tower humming away? There is no way that the planning division can say there will be no adverse effect on hawks, coyotes, opossums, raccoons, deer, bobcats, etc. I have seen egrets in both my yard and in the drain basin in which the tower will be built..

These animals have already been assaulted by flood and fire in the area and a tower that high cannot but disrupt habitat behavior.

3. On the first page of the report of Bemis Development, Inc (a company from Orange County and employed by AT&T) it states that the proposed site at 147 E. Loma Alta was not the first choice of AT&T but alternative sites were abandoned because of negative response from the surrounding community. We, the most immediate neighbors of the proposed site, object also. Why would we want this in our neighborhood? (If you look on the first page you will see that AT&T already has a site at 2400 N. Fair Oaks.)

4. Mr. Edwards, of the Planning Division, writes in the staff report that the cell tower will not result in property values going down. How can we know? I would not have bought my home if that tower was already there.

The staff report was written before most of the immediate neighbors knew of the application for the conditional use permit. I was certainly never polled by AT&T, nor by the Altadena Town Council, nor by the Planning Department.

Please deny the granting of the permit. The possible spotty cell phone reception is part of living in a more removed location. Most of us have land lines. I do not see why I need to have the well-being of AT&T prioritized over my view, property value, and peace.

Sincerely,

Lillian H. Jones
190 E. Loma Alta Dr.
Altadena, CA. 91001
(626) 798-5685

December 2, 2010

Mr. Alex Garcia, Hearing Officer
Zoning Enforcement
320 West Temple, Room 320
Los Angeles, CA 90012-3289

Fax (213)217-5108
cc: Mr. Dean Edwards, Planning

Re: Opposition Letter - Permits R2010-00090(5) and RCUP201000014

Greetings.

I am writing **to express my opposition of a conditional use permit** to install an unmanned telecommunications facility at 147 East Loma Alta Drive, Altadena, CA 91001.

I was very surprised to see the notice of hearing posted on the chain link fence in front of the proposed location and even more surprised to learn that the Altadena Town Council approved this site without polling residents in this immediate area. **I live within 100+/- feet from the proposed site (160 East Loma Alta Drive, Altadena, CA) and was never surveyed by the Altadena Town Council, Los Angeles Regional Planning Department nor AT&T bothered to ask my opinion of the proposed location. Because of my close proximity to the site, I will be directly impacted by the construction of the cell tower site facility –**

I am completely opposed to the telecommunications facility being located at 147 East Loma Alta Drive, Altadena, CA for the following reasons;

1.) Although your report provides an "un-documented" sentence that states my property value will not diminish due to the cell tower. I completely disagree…**I would never have purchased my house if I had known that a cell tower was being proposed across the street from my residence.** Would you buy a home across the street from a cell site/tower? Probably not.

2.) The main reason why I purchased my home was because it was located in a quiet-quaint residential community surrounded by beautiful nature, walking trails, picturesque mountains, "real" green trees and I even felt that the flood control basin provided a natural habitat for the wild animals that drink, feed and live near the basin. I wanted to be away from the hustle and bustle of the busy city. How many people, utility trucks and other crews do you anticipate accessing the

proposed cellular tower site? Will we have more traffic coming in and out of the flood control basin area? How many more towers will be installed in this location? **I am concerned that the aesthetics will change to accommodate "big business" AT&T and absolutely no consideration for my quiet enjoyment and peaceful living.**

3.) I was provided with a copy of the Bemis Development report – **it appears that AT&T had another proposed site located at 2400 North Fair Oaks, Altadena, but received opposition from residents in the immediate area because of the negative aspect surrounding the construction of the cell tower.** They didn't want it either…Who really wants the cell tower? Can it be located near those who desire it most?

Please deny (or at the very least suspend) the conditional use permit until community outreach is done. Poll the residents who will be most impacted by this cellular tower and do not rely on input from the Altadena Town Council, they do not have the budget or the background to represent the community in a professional manner.

Respectfully,

Suzanne Madison, Home Owner
160 East Loma Alta Drive
Altadena, CA 91001
(626)298-6376 – Land Line Subscriber

December 3, 2010

DEC 13 2010

Mr. Alex Garcia, Hearing Officer
Zoning Enforcement D
320 W Temple Room 320
Los Angeles, CA. 90012-3289

Re: Opposition Letter - Permits R2010-00090(5) and RCUP 2010-00014.

Dear Alex Garcia,

I am writing about my concerns on my opposition of a conditional use permit to install an unmanned telecommunications facility @ 147 E. Loma Alta Dr, Altadena, CA. 91001

I was informed about this back last summer regarding this & I'm not happy at all. I am completely opposed to the telecommunication facility @ 147 E. Loma Alta Dr. Altadena CA. 91001. for these reasons:

1. Living and buying our home up here in Altadena is priceless. I would of never approved this as a homeowner, take this & put it in an area, who is not opposed to this.

2. The serene atmosphere, quiet & beautiful so much natural living creatures Critters and all the pines & the teodora trees. Untouched habitant its amazing.

Please deny or suspend the conditional use of permit until our community can get together We are the ones who are impacted by this, the most.

Sincerely,
Carol Moore

Carol Moore
126 E. Loma Alta Dr.
Altadena, CA. 91001
(626) 398-4826 tel/fax

Applicant BDI Dena Dsign for

ATT Wireless

R2010-00090

Cup 201 000 014

1/26/2010 R1 7500 ZP1

Installation of unmanned

telecom facility –

We support this plan.

Liesel Reinhardt

+ family Altadena, CA

January 11, 2011

JAN 13 2011

To: Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I live at 35 E. Loma Alta Drive, just a few hundred yards from the proposed cell tower. I would like to express my very strong support for our household. We have AT&T service for our cell phones and have almost no service signal; occasionally our cell phones will have a couple of bars but not long enough to make a call.

I opposed the previous proposed location for this cell tower due to the aesthetic issues it presented that would have lowered property values in the immediate area. The County and the applicant heard this community's complaints and worked with the community the select the newly proposed site that will have the least negative impact on the community. I strongly support the currently proposed location with the caveat that the chain link fence that encloses the proposed property be heavily landscaped to hide the base of the tower and proposed adjacent building from view at street level. A cell tower at the proposed location with heavy landscaping will provided this community with much needed cellular phone service while having the least impact on the community.

When the power goes out is this area, we are totally without emergency contact because our phones require electricity to operate. We are also without our computers when the power out. With the cell tower, we would at least be able to call out for emergency services if needed.

Again we strongly support the tower installation at the proposed site at 147 East Loma Alta Drive in Altadena.

Sincerely,

David A. Wilson
dwilson252@gmail.com
(626) 345-9724 Home #
(626) 840-4597 Mobile #

January 8, 2011

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012

Re: Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014)
01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I wanted to let you know how much I would like to see an AT&T cell tower constructed at the Fair Oaks Debris Basin on Loma Alta Street in Altadena. In December for the first hearing, I did nothing; I thought it would just pass without anyone responding, I didn't believe anyone would dispute the issue. We do not have cell coverage in our home. Both my husband and I rely on our cell phones for work and emergency issues. I know that I am not alone as this is a problem for most of our street. I am not able to attend the next hearing, but I wanted to make sure you heard my voice.

Sincerely,

Lynne A Westphal

Lynne Westphal
3448 Holly Slope Road
Altadena, CA 91001
626-791-4991 (H)
626-353-2663 (C)

To: Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I live at FAIR OAKS & TAOS RD just a few hundred yards from the proposed cell tower. I would like to express my very strong support for our/my household of 4 (#of people in the home). We/I have BOOST - MOTOROLA (company used for cell service) service for our/my cell phones.

(State your reason for wanting the cell tower in the location proposed.)
WE CAN'T GET NO SERVICE UP HERE. IN CASE OF EMERGENCY WHAT HAPPENS??

When the power goes out up here we are totally without emergency contact because our phones require electricity to operate. We are without our computers without power. With the cell tower we would at least be able to call out for emergency services if needed.

Again we strongly support the tower installation at the proposed site at 147 East Loma Alta Drive in Altadena.

Sincerely,
Emma Alvarado

Head of Household's Full Name

(626) 798 2263 Home #

(626) 219 6122 Mobile #

JAN 18 2011

Edwards, Dean

From: Sharon Tripp [sharontripp@sbcglobal.net]
Sent: Monday, January 03, 2011 6:45 PM
To: Edwards, Dean

Hello Mr. Edwards, we the residence of 3474 McNally Ave, Altadena Ca 91001, would like to express our concern with the Cell Phone Towers. We are in favor of having the tower placed on the Loma Alta Site. So this vote is for Kerry and Sharon Tripp that we approve the vote on the Tower Site. We are tired of not being able to use our phones unless we are in certain locations in the house.

Edwards, Dean

From: nancy (catwoman) [wildfelinenv@yahoo.com]
Sent: Thursday, December 30, 2010 9:39 AM
To: Edwards, Dean
Subject: Altadena cell tower support

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Dear Mr Edwards,

I live in Altadena and support the cell tower planned for the Loma Alta/Fair Oaks debris basin.

Nancy Vandermey

Edwards, Dean

From: Warren Skidmore [was@tmt.org]
Sent: Tuesday, December 21, 2010 9:11 PM
To: Edwards, Dean
Subject: Cell tower at Loma Alta storm debris basin in Altadena.

Dear Mr. Edwards,

I want to voice my support of the proposed cell tower installation at the site to the side of the storm debris basin on the north side of Loma Alta Drive and the east side of McNally Avenue.

The location of my family home at 3605 Fair Oaks Avenue, Altadena, CA 91001 and my neighbors will benefit from having improved cell phone coverage in the future whilst at this time there very little to no coverage.

Yours sincerely,

Warren Skidmore.

Dr. Warren Skidmore,
Thirty Meter Telescope Observatory Corp.,
1111 South Arroyo Parkway, Suite 200,
Pasadena,
CA 91105, USA

was@tmt.org was@astro.caltech.edu
TMT office +626-395-6956
TMT Fax +626-395-1615
JPL office +818 354 0198
JPL lab +818 354 0778

Edwards, Dean

From: cloda4@yahoo.com
Sent: Tuesday, December 21, 2010 4:15 PM
To: Edwards, Dean
Subject: Cell Tower in Altadena

Hello. My name is Dr. Cloda Jones and my husband and I have lived on McNally for about fourteen years. During that time we have not been able to use our cell phones at home, despite purchasing from different carriers. Our family is very much in favor of having a cell tower put in to rectify this problem. Please take note that the residents in our neighborhood watch are also in favor of having a cell tower put in. Thank you for your consideration in this matter.

Have a wonderful holiday!
Sent via DROID on Verizon Wireless

Edwards, Dean

From: Greg Middleton [gregmiddleton@earthlink.net]
Sent: Thursday, December 30, 2010 12:56 PM
To: Edwards, Dean
Subject: Cell Tower at 147 East Loma Alta

To: Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless
R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1
Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I live at 3520 McNally Avenue just a few hundred yards from the proposed cell tower. I would like to express my very strong support for our household of three. We have AT&T services for home, entertainment package and 2 cell phones (iPhone). We have the bundle package with AT&T.

When the power goes out up here we are totally without emergency contact because our phones require electricity to operate. We are without our computers without power. With the cell tower we would at least be able to call out for emergency services if needed.

Again we strongly support the tower installation at the proposed site at 147 East Loma Alta Drive in Altadena.

Greg Middleton
greg_middleton@att.net

Cynthia Middleton
cjmiddleton@prodigy.net

Kanili Johnson
Armed Security Guard

Greg Middleton
www.gregemiddleton.com
(626) 791-2770 home office
(626) 524-4678 mobile

Edwards, Dean

From: Donna Barnes-Roberts [donna@barnesroberts.com]
Sent: Thursday, December 30, 2010 1:20 PM
To: Edwards, Dean
Cc: Philip Barnes-Roberts
Subject: Proposed Cell Tower in Altadena (Fair Oaks and Loma Alta).

I would like to voice my support for this cell tower being built.
Altadena has notoriously poor cell service, and I hope this adds more comptetition to what choices we have in cell carriers up here. I personally am a verizon wireless customer and would love for them to add some capabilities too, but ATT is fine with me.

Just please let them build it. It is a realistic location.

--
Check out my new blog about the fork in the road. Don't know about it? Check out www.theforkintheroadgang.com .

And I am also now doing a blog about "What You Missed at The Coffee Gallery Backstage" showing past happenings with a link to what's next! That one is at www.atthecoffeegallery.com.

If you would like to learn how to control (sometimes) watercolor yourself, sign up for my class email list by - sending me email to me and asking. I will then notify you when openings in my classes occur.

Go to my web site: www.barnesroberts.com to see my artwork, and for information about art and art clubs in the Pasadena, CA area. Plus a little arty humor, and of course information about that wonderful, nationally known watercolor artist, Donna Barnes-Roberts (me, okay). Click on my blog to see newer paintings!

I have paintings at Tirage Fine Art in Pasadena (www.tirageart.com).

"Art is about PASSION. And passion is beyond reason." -- Donna Barnes-Roberts

Edwards, Dean

From: Kelly Tompkins [kelly@adventurelink.com]
Sent: Friday, December 31, 2010 11:32 AM
To: Edwards, Dean
Subject: Loma Alta cell tower - Please approve this, we need better AT&T reception in Altadena!

Dear Mr. Edwards,

As a resident of Altadena and as an AT&T subscriber, I would request that you approve the installation of this tower. Current reception for AT&T is unreliable and the signal strength needs to be improved and the installation of this tower will solve this problem. Please do not hesitate in contacting me, should you require further clarification.

Best regards,

Kelly

Kelly Tompkins
121 Laurel Drive
Altadena, CA, 91001
Tel. (626) 791-0614
Cel. (310) 614-4976
Email. kelly@adventurelink.com

Deadline approaching for Loma Alta cell tower comments

Pictured: a consultant's simulation of the monopine tower in place

Anyone with an opinion (for or against) the proposed monopine cell tower one block north of Loma Alta in the McNally neighborhood are urged to mail/email their views to the Department of Regional Planning to be received no later than Jan. 15. The department has schedule a hearing on the conditional use permit for the tower on Feb. 9.

To make sure it goes to the right place, make sure to head the message:

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

It should go to:

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor

Edwards, Dean

From: matthew pearce [dingo_ugly@yahoo.com]
Sent: Friday, December 31, 2010 11:59 AM
To: Edwards, Dean
Subject: Applicant: BDI –Derra Design for AT&T Wireless
R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1
Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1
Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

yes please, yes please , yes please.
we live on Alaca drive in altadena and our AT&T reception is terrible. Calls are dropped all the time.
I hope this is approved and the pine tree version will fit into the area well, much better than the palm tree version. I also like that this location leaves the corner garden on loma alta/fairoaks intact.
I hope this is approved

matthew pearce
626 296 2872

Youtube has lifted the audio block- a victory for procrastination my mountain biking short film...
Mammoth MTN downhilling - check it out
http://www.youtube.com/watch?v=xb_m_pb0Ns0

Edwards, Dean

From: Carolyn Barber [cswabb@hotmail.com]
Sent: Friday, December 31, 2010 1:34 PM
To: Edwards, Dean
Subject: In favor of Loma Alta cell phone tower

Dear Mr. Edwards,

We desperately need better cell phone coverage in Altadena, and that's why I'm in favor of the proposed cell phone tower on Loma Alta.

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014)
01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine

Thank you,

Carolyn S. Barber

Edwards, Dean

From: Elliot Gold [Elliot@Telespan.com]
Sent: Friday, December 31, 2010 3:30 PM
To: Edwards, Dean
Subject: Elliot Gold a 40 year resident of Altadena supports the cell tower
Attachments: Elliot.vcf

Friday December 31 2010

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Mr. Edwards:

RE:Deadline approaching for Loma Alta cell tower comments

Like you, I don't know a single person who doesn't depend on their cell phone, and furthermore, I don't know a single person who fears (to put it politely) calls which are dropped due to lack of service (lack of towers).

I drive, walk, and ride around Altadena all the time, and lose my signal on every trip. Furthermore, I lose my signal when I walk from one room of my house to another.

Please, we need that new cell tower in Altadena.

Elliot Gold
50 W. Palm St
Altadena, CA 91001
Elliot@telespan.com
+1-626-797-5482

Edwards, Dean

From: Katie McClain [katiemcclain@me.com]
Sent: Saturday, January 01, 2011 9:00 AM
To: Edwards, Dean
Subject: Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014)
01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Dear Mr. Edwards-

I am in favor of adding this cell tower to the Altadena neighborhood.

Thank you,
Katie McClain
1821 Homewood Dr
Altadena, CA 91001

Edwards, Dean

From: dudleyj@gmail.com on behalf of Dudley Johnson [dudleyj@earthlink.net]
Sent: Saturday, January 01, 2011 12:23 PM
To: Edwards, Dean
Subject: Applicant: BDI –Derra Design for AT&T Wireless
R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1
Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Safety first!

I highly recommend that this tower be approved. Altadena is famous for bad cell phone service. We can't make or receive calls where we line on Alta Pine Dr.

It is important for us to have cell service for safety issues. When land lines go out, cells are necessary for emergencies. And the placement of tower seems like it will also offer more safety to the hikers on the nearby mountains.

Please allow this to go through and offer us the piece of mind we deserve.

Thank you,

Dudley Johnson
1003 Alta Pine Dr.
Altadena, CA 91001

Edwards, Dean

From: Holly Rundberg [hollyrundberg@sbcglobal.net]
Sent: Saturday, January 01, 2011 2:42 PM
To: Edwards, Dean
Subject: Cell Tower in Altadena at Drain Basin on Loma Alta

To: Mr. Dean Edwards

Department of Regional Planning

320 West Temple Street, 13th Floor

Los Angeles, CA 90012

dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I live at 3504 McNally Ave. just a few hundred yards from the proposed cell tower. I would like to express my very strong support for our/my household of one. I have AT&T service for my cell phones.

I have had a cell phone for 12 years and have always felt that the main reason for it was my personal safety. I have enjoyed the convenience as well.

I was visiting my daughter in NYC during the last black out and we were able to communicate and plan a meeting location using our cell phones. I feel that being in an earthquake and fire area the cell phone is important for our safety as well.

Again I strongly support the tower installation at the proposed site at 147 East Loma Alta Drive in Altadena.

Sincerely,

Holly Rundberg

hollyrundberg@sbcglobal.net

Edwards, Dean

From: ninarose mayer [lifelongwalker@dslextreme.com]
Sent: Saturday, January 01, 2011 5:16 PM
To: Edwards, Dean
Cc: hollyrundberg; Greg Middleton
Subject: cELL TOWER FOR EAST LOMA ALTA, ALTADENA

TO DEAN EDWARDS:

This is to tell you that I'm totally in favor of placement for cell tower planned for East Loma Alta, Altadena, Calif. 9l001.

I'm a 50 yr. resident, home owner, living at 3565 N. McNally Ave., Altadena, Calif. Ph. 626/ 798--5464....
Email: lifelongwalker@dslextreme.com

A cell tower is badly needed up here, as I have had numerous workmen over the recent years. And those workmen all use cell phones. But they have problems finding spots where reception is good. So the sooner the better that we get one for our neighborhood.

Sincerely,

Ninarose Mayer, home owner....

Edwards, Dean

From: Matt Hettermann [mhetterm@yahoo.com]
Sent: Sunday, January 02, 2011 7:06 PM
To: Edwards, Dean
Subject: Letter in support of cell tower in zip 91001

Regarding:

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1
Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

I live at 504 Wapello St., Altadena, CA 91001 and am in support of a new cell tower on Loma Alta Drive. Both my wife and I are AT&T wireless subscribers, and get very poor reception in our home. We would be very happy to have this improved by a new tower.

Thank you for your attention.

- m

Matt Hettermann
504 Wapello St.
Altadena, CA 91001
(626) 296-1726

Edwards, Dean

From: Bill Westphal [bill@westphalfamily.com]
Sent: Sunday, January 02, 2011 8:08 PM
To: Edwards, Dean
Subject: CUP 201000014

Re:
Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014)
01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
Dear Mr. Edwards,

I would like to voice my support for the proposed Wireless Facility in the above named action. We here in Altadena have long suffered with poor or no cell phone reception. Not only would a new cell site provide improved coverage, it would also provide additional options for residents and their telecommunications needs. This would allow residents the flexibility to use wireless carriers as their primary telecommunications service and not be restricted to the landline service offered by our Local Exchange Carrier.

Please support and approve this action. It will surely benefit the community as a whole.

Bill Westphal
bill@westphalfamily.com

Altadena WeatherCam
http://www.westphalfamily.com/wxdata2.html

Edwards, Dean

From: Shannon E [naturalbookworm@hotmail.com]
Sent: Monday, January 03, 2011 12:00 AM
To: Edwards, Dean
Subject: Cell Phone Tower for Altadena, CA

To: Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I live at 3510 McNally Ave. just a few hundred yards from the proposed cell tower. I would like to express my very strong support for our household of three. We have AT&T service for our cell phones.

I have had a cell phone for 11 years and have always been very frustrated at the lack of cell reception once I reached a certain area of Altadena. I use my cell phone for work, and have missed out on jobs because employers can't get a hold of me when I am home. I feel like I'm paying for cell phone service I barely use. Having free nights and weekends is pointless when you live in Altadena! Please bring us into the 21st Century with all other cities!

Again, my family and I strongly support the tower installation at the proposed site at 147 East Loma Alta Drive in Altadena.

Sincerely,

Shannon Evans and Family

naturalbookworm@hotmail.com
(626) 791-5589 Home #
(626) 626-379-1029 cell #

86 E. Loma Alta Drive
Altadena, CA 91001
January 3, 2011

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless□R2010-00090
(CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 □Installation of
an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards:

I live at 86 E. Loma Alta Drive which is just across the street from the proposed cell tower. I am in favor of the installation of the cell tower.

We have experienced dropped calls on many occasions as we talked long distance to family members and on local calls to family and friends.

Our family has owned cell phones for many years for personal safety and to be used in an emergency.

Again I support the cell tower installation at the proposed site at 147 East Loma Alta Drive.

Sincerely,

Harvey Miller

Email address: murtcaro@pacbell.net
Home #: (626) 791-5518

Richard Johns

235 Taos Rd
Altadena CA 91001
arjay1127@earthlink.net

03 January 2011

Dean Edwards
Department of Regional Panning
320 W Temple St 13 Floor
Los Angeles CA 90012

Dear Mr Edwards:

I am writing this letter to confirm that I support the installation of a cell phone tower at the drain basin, located on Loma Alta Street, near Fair Oaks.

This tower is necessary to establish and ensure the quality of life for residents in this area.

Thank you,

cc: Mike Antonovich

86 E. Loma Alta Drive
Altadena, CA 91001
January 3, 2011

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless□R2010-00090
(CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 □Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards:

I live at 86 E. Loma Alta Drive which is just across the street from the proposed cell tower. I am in favor of the installation of the cell tower.

We have experienced dropped calls on many occasions. Sometimes when talking long distance to family members and on local calls to family and friends.

Our family has owned cell phones for many years. We purchased them and used them for our personal safety. For instance, I used the cell phone to contact my husband and family after the September 11, 2001 attacks to let them know I was safe.

Again I support the cell tower installation at the proposed site at 147 East Loma Alta Drive.

Sincerely,

Carole Miller

Email address: murtcaro@pacbell.net
Home #: (626) 791-5518

Edwards, Dean

From: Carolyn Barber [cswabb@hotmail.com]
Sent: Thursday, January 06, 2011 7:55 AM
To: Edwards, Dean
Subject: In favor of Loma Alta cell phone tower

Dear Mr. Edwards,

We desperately need better cell phone coverage in Altadena, and that's why I'm in favor of the proposed cell phone tower on Loma Alta.

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014)
01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine

Thank you,

Carolyn S. Barber

Edwards, Dean

From: David Lombardero [lomba1@earthlink.net]
Sent: Thursday, January 06, 2011 8:18 AM
To: Edwards, Dean
Subject: AT&T Wireless monopine in Altadena (CUP 201000014)
Attachments: image001.gif

Dear Mr. Edwards:

As an Altadena resident who has little to no cell phone coverage, I strongly support the application.

The tower would be erected in an area where its presence would not be obvious. It would cover streets that, because of the topography, currently lack cell coverage. It also would improve cell coverage on the hiking trails above Altadena, which receive heavy use.

Because of windy conditions, land-line phone service is prone to outages. Therefore, cell phone service at home is important for safety.

David A. Lombardero

Edwards, Dean

From: Alice Sarkisian Wessen [awessen@yahoo.com]
Sent: Thursday, December 30, 2010 10:00 AM
To: Edwards, Dean
Cc: Alice Wessen; Randii Wessen; Ian
Subject: Email letter from three in SUPPORT of proposed cell tower at 147 East Loma Alta, Altadena CA

To: Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless
R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1
Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

My husband Randii Wessen, my 18 year old son Ian and myself Alice Wessen wish to express our strong support for the proposed cell tower.
Our cellular coverage is spotty in our area. The proposed site has had many hearings, much community support, much discussion and work within the community including moving it from the initial proposed site at Lincoln Water park at Fair Oaks and Loma Alta to the debris basin, and has been posted widely in several local listserves and websites.

Alice Wessen
awessen@yahoo.com
Randii Wessen
randiiwessen@yahoo.com
Ian Wessen
iwessen@yahoo.com

Address: 3972 Alzada Road, Altadena, CA 91001

Please count this as THREE votes for the cell tower.
Previous discussion and web links to the cell tower:
http://www.alicewessen.com/alice_sarkisian_wessen/2010/11/cell-tower-update-on-loma-altafair-oaks-debris-basin.html

http://www.altadenablog.com/2010/03/land-use-committee-to-look-at-new-cell-tower-location.html

Edwards, Dean

From: John Oscarson [joscarson@charter.net]
Sent: Thursday, December 30, 2010 11:45 AM
To: Edwards, Dean
Subject: proposed new cell tower in Altadena

Mr. Dean Edwards

Department of Regional Planning

320 West Temple Street, 13th Floor

Los Angeles, CA 90012

dedwards@planning.lacounty.gov

Regarding: Proposed Cell Tower, Loma Alta/Fair Oaks Debris Basin

Mr. Edwards,

I live at 3808 Alzada Rd in Altadena. I have been a resident of Altadena for over thirteen years. The cell service in this area has been poor. I strongly support the installation of a new cell tower in the debris basin off Loma Alta. I deal with homeowners all over the greater Los Angeles area on a daily basis and the number of homes without landline service is growing rapidly. Proper cell service is becoming a necessity rather than a luxury. So please voice my strong support for the proposed new cell tower here in Altadena.

Regards,

John Oscarson

Mildred L. Johns

235 Taos Rd
Altadena CA 91001
626-797-7770

03 January 2011

Dean Edwards
Department of Regional Panning
320 W Temple St 13 Floor
Los Angeles CA 90012

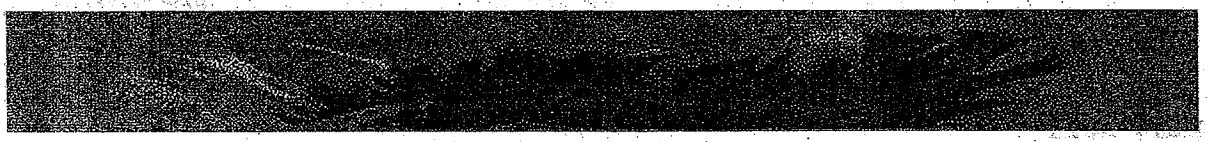
Dear Mr Edwards:

I am writing this letter to confirm that I support the installation of a cell phone tower at the drain basin, located on Loma Alta Street, near Fair Oaks.

Thank you,

Edwards, Dean

From: Sarah Keever [SKeever@SolheimLutheran.org]
Sent: Monday, January 10, 2011 10:31 AM
To: Edwards, Dean
Subject: Support of the ATT cell tower project on Loma Alta Drive



Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014)
01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Mr. Edwards,

My husband, Jim Saunders, and I are residents on Holly Slope Rd. in Altadena. We are contacting you in support of the proposed ATT cell tower. Currently we have no cell service when we are home and are at the mercy of our land line should we have an emergency. We have had several instances where our land line is out of order and have no means to place a call for assistance since we have no cell phone coverage. We hope that with a new cell tower, we will have the coverage we need in these kinds of instances.

Whatever you can do to help push this through the Altadena Town Council would be greatly appreciated.

Thank you,

Sarah Keever and Jim Saunders

3502 Holly Slope Rd., Altadena

Sarah Keever, SPHR

Director, Human Resources
Solheim Lutheran Home
2236 Merton Ave.
Los Angeles, CA 90041
(323) 257-7518
(323) 255-3544 - Fax

To: Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta
Applicant: BDI –Derra Design for AT&T Wireless□R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 □Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I live at 238 Taos Road in Altadena, about a half mile from the proposed cell tower. I would like to express my very strong support for our household of three. We have AT&T service for our cell phones and it would be of great convenience to be able to use our cellular phone from our residence, especially in an emergency situation.

Again I strongly support the tower installation at the proposed site at 147 East Loma Alta Drive in Altadena.

Sincerely,

Leah Tadena

leahtadena@gmail.com
238 Taos Road, Altadena, CA 91001
(626) 398-1699

Edwards, Dean

From: Richard Dekany [rgd@astro.caltech.edu]
Sent: Thursday, January 13, 2011 10:53 AM
To: Edwards, Dean
Subject: Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) - SUPPORT

1/13/11

Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012

Re: Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1
Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I'm writing today on behalf of my four-person household in support of the proposed telecommunications facility. I am currently an AT&T mobile subscriber and believe improved communications coverage would provide my family improved safety by having 911 and other emergency services accessible through my cell phone, which currently is unusable at my address (just a few hundred yards from the proposed site). My children and I often walk in the neighborhood and should we need assistance, I worry valuable minutes could be lost contacting emergency responders.

I believe the proposed site at 147 East Loma Alta Drive strikes an appropriate balance between safety, aesthetics, and operational issues, allowing company service with negligible impact on the surrounding.

Thank you for your consideration.

Sincerely,

Dr. Richard Dekany

3440 N. Fair Oaks Ave., Altadena, CA 91001

Edwards, Dean

From:	Jay Tyzzer [jaytyz@charter.net]
Sent:	Sunday, January 16, 2011 2:53 PM
To:	Edwards, Dean
Cc:	'Linda A Holler'; 'Jay Tyzzer'
Subject:	Proposed Cell Tower - Loma Alta , Altadena

To: Mr. Dean Edwards

Department of Regional Planning

320 West Temple Street, 13th Floor

Los Angeles, CA 90012

dedwards@planning.lacounty.gov

Re: Cell Tower at 147 East Loma Alta

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) filed 01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

We live at 3426 Fair Oaks Avenue, Altadena, CA. Our cross street is Loma Alta Drive and our house is just a few hundred yards from the proposed cell tower. I would like to express my very strong support for our/my household which uses 2 cell phones in the home. . We use both AT&T and Verizon service for our/my cell phones.

As anyone can attest, the cell coverage in this area is weak at best. We need this service. This proposed wooded site will also camouflage the cell tower. This is a perfect location. It will also provide better services if the power were to go out during an emergency.

Again we strongly support the tower installation at the proposed site at 147 East Loma Alta Drive in Altadena.

Howard Josiah Tyzzer

jaytyz@charter.net

Linda A. Holler

lholler2@mindspring.com

Sincerely,

Howard J. TyzzerIII

Home # (818) 583-9027

Mobil# (626) 710-7494

Edwards, Dean

From: Dick Smoak [dicksmoak@yahoo.com]
Sent: Saturday, January 15, 2011 3:55 PM
To: Edwards, Dean
Subject: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014) 01/26/2010 – R1-7500 – ZP1

RE:

Applicant: BDI –Derra Design for AT&T Wireless R2010-00090 (CUP 201000014)
01/26/2010 – R1-7500 – ZP1 Installation of an unmanned telecommunications facility disguised as a 100 foot monopine.

Dear Mr. Edwards,

I write in strong support of the installation of an unmanned telecommunications facility disguised as a 100 foot monopine to be located on County land near the overflow basin on Loma Alta Road in Altadena.

We have a problem in upper Altadena in that we lack access to cell phone service. I live on Holly Slope Road, just north of the site of the proposed tower. We have no signal from AT&T along Holly Slope Rd, Canon St., as well as Loma Alta St. and the surrounding area. This is both a personal hardship and a safety issue.

Those among us who use a cell phone for business purposes are cut off from contacts in the business world. Most importantly, cell phones can mean the difference between life and death if, for example, a home invasion robbery occurs and the only access to the Sheriff is a cell phone. Cell phones are useful in reporting suspicious behavior when out in the local neighborhood.

Note that not only AT&T customers are affected by a lack of service. Subscribers to cell phone service which piggy backs on the AT&T network are also affected.

The proposed tower is located well away from homes in the area and sited in a grove of pine trees. We will adjust very easily to its presence. As proof of that, note that the uglist thing in residential neighborhoods is the ordinary telephone pole with its arms, carrying electrical, telephone and cable wires, spread wide. We forget that these ugly objects are present after awhile. So too will we forget about the monopine tower.

Again, the added cell phone service provided by the subject AT&T tower will provide upper Altadena with added convenience and, most importantly, add measurably to the safety of all who live and travel here.

Sincerely,

Richard Smoak

3554 Holly Slope Road, Altadena, 91001

Edwards, Dean

From: Harvey Carole Miller [murtcaro@pacbell.net]
Sent: Friday, January 14, 2011 10:57 PM
To: Edwards, Dean
Subject: Re: [mcnally-nw] Updated cell tower event

From: Larry Shannon
85 E. Wapello Street
Altadena, CA 91001
Friday, January 14, 2011

To: Mr. Dean Edwards
Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
dedwards@planning.lacounty.gov

Re: [mcnally-nw] Updated cell tower event ATC - Census tract 4602

As I don't have a computer and time is of the essence, I asked Harvey and Carole Miller to send an email to you telling you that I am in favor of the AT&T cell tower being placed in the storm drain storage site on Loma Alta.

The Miller's live at 86 E. Loma Alta Dr., Altadena.

Thank you.

Signed: Larry Shannon

FACTUAL
PROJECT NUMBER R2010-00090-(5)
CONDITIONAL USE PERMIT 201000014

REQUEST
The **applicant, AT&T Wireless**, is requesting a conditional use permit to authorize the construction, operation and maintenance of a wireless telecommunications facility (WTF), a use that is subject to permit.

REPRESENTATIVE: Kathy Phelps **OWNER:** Los Angeles County Flood Control District

PROJECT DESCRIPTION
The proposed project consists of the construction of a WTF that includes a 100 foot tall monopine, nine panel antennas mounted at 95 feet high (as measured to the top of the antennas). Four equipment cabinets and other related equipment will be located in the 324 square-foot lease area. The site plans depicts another 300 square foot lease area for another carrier that will co-locate on the facility in the future. The lease areas will be enclosed by wrought iron fencing with landscaping concealing the fencing on the west, south and east sides. One parking space for maintenance vehicles is provided. Access to the facility is off of Loma Alta Drive.

LOCATION
The subject property is located at 147 East Loma Alta Drive in the unincorporated community of Altadena and Altadena Zoned District.

Assessor's Parcel Number(s): 5831-014-902

Altadena Community General Plan Land Use Designation: Flood Control Facilities

Zoning: R-1-10,000 (Single-family Residence)
Community Standards District (CSD): Altadena

SITE DESCRIPTION
The .84 acre subject property is developed with flood control facilities. The drainage area is flanked by a paved pathway to the west and a concrete ditch to the east. The south east side property is landscaped with trees. The perimeter of the property is secured with chain link fencing.

ENVIRONMENTAL DETERMINATION
The subject property is not located in a Significant Ecological Area or Ecologically Sensitive Habitat Area. The proposed project is eligible for a Class 3 (New Construction or Conversion of Small Structures) Categorical Exemption from California Environmental Quality Act reporting requirements.

STAFF CONTACT PERSON: Dean Edwards		
RPC HEARING DATE(S) February 9, 2011	RPC ACTION DATE February 9, 2011	RPC DECISION Approved
MEMBERS VOTING AYE 4	MEMBERS VOTING NO 0	MEMBERS ABSTAINING 0
STAFF RECOMMENDATION (PRIOR TO HEARING): Approval		
SPEAKERS* (O) 4 (F) 3	APPEAL PETITION (O) 45 (F) 0	LETTERS (O) 14 (F) 35

*(O) = Opponents (F) = In Favor

Edwards, Dean

From: Rose [rose@bikramlacanada.com]
Sent: Tuesday, February 08, 2011 10:19 PM
To: Edwards, Dean
Subject: R2010-00090-(5) - I oppose the construction

Hi Dean,
My name is Rose Malmberg and I oppose the construction of the 100 foot tall cell tower at 147 East Loma Alta Drive, Altadena.

I have a few questions, that I would like to have answered in writing and at the hearing tomorrow. They are as follows:

1. Which entity actually polled the people? In the last hearing, we were told that a poll had been done. I would like to know who actually did the polling? I realize that ambiguity can play a significant roll in getting a project approved.
2. Which people where actually polled? Do you have the addresses of the people? Do you have their responses, in writing? Where are the results of this poll?
3. Were the homeowners with property adjacent to the drain basin, polled? How many of them said that they would like to have it built?

I would like to pose that no poll was actually done. If a true poll had been done, then you would have heard all the opposition for this project months ago, especially from those of us who have the most to loose. Now that we know about this project, the people are speaking up. We are the "poll" and we oppose the project.

It truly is a conflict of interest for the county to vote on something for which they will receive a financial gain. How much does LA County stand to gain on a monthly basis in rent from AT&T? (This is not a rhetorical question, I do want an answer.) I read that the lease is for a 15 year period. That is a substantial amount of money. I know of an individual, in Glendale, who receives $6000 a month from a carrier for having a cell tower on his property. If I were given the opportunity, I might allow AT&T to build on my property and abandon my house - just so that I would not have to live near the tower. For that amount of money, I could have a substantial home in La Canada. But I have not been given the opportunity to have it in my yard... I cannot benefit from the cell tower 80 feet from my property line. In fact, I can only be harmed by it.

Why hasn't the county, who should be the "watch dog" for the community, asked AT&T to do an environmental impact report? Why is it that the county is making this project exempt from the CEQA guidelines?

I oppose the construction, operation and maintenance of a wireless tower at 147 East Loma Alta Drive in Altadena. In fact, *I oppose it in any residential area* in Altadena. For the purposes of this email, I provide the following reasons for my opposition:

Location: 1.) This is a residential area. A residential neighborhood should not have to support the bottom line of a big business. I doubt if I could get a business license to operate a cell tower from the front area of my yard. It is zoned residential for a reason and should stay such. 2.) The drain basin is a low spot in the hills, as such it is not a desirable place to put a tower. To effectively send out the waves, it should be at the top of a hill, rather than down in a ditch. We live right next to the San Gabriel Mountains. AT&T could contact the National Forest Service and work it out with them to put the tower up on the hill with existing towers. If not there, maybe in the Las Flores water area, at the top of Lake Avenue, where it is at the top of a hill. (I have noted cell "panels" attached to the utility poles in that area. (There is no need for a 100 foot tall tower if the cell "panels" are placed in the correct location.)

Health Issues - There is a negative impact on the health of humans and animals who live

near cell towers. There are plenty of studies. I will bring in a copy of one commissioned by the City and County of San Francisco in 2007. It was written by Madga Havas, B.Sc., Ph.D. of Trent University in Canada.

Property Values - There are studies that show that property values go down (2%-20%) when a cell tower goes up in a neighborhood. The closer the property is to the tower the higher the percentage drop in property value. My house is adjacent to the site, a measly 80 feet from the proposed tower. The *perception* that there are problems will keep people from buying the property. I would not have purchased my house had I known that this tower was proposed to go up.

Hazardous Conditions- The trees in the proposed area are large and may not be in good health. A tree fell down in July of 2010, in the first week that we moved into our house. There were no winds, there was no rain... there were no adverse conditions at the time. It just fell over. There are much, much taller trees and they are in the direct line of there the tower and the electrical boxes will be placed. This is a fire prone area, I do not want to be the house closest to the fire if one should start. Has the county done an environmental impact report to see whether the trees are healthy? Has an profession tree expert been asked to examine the trees?

Sincerely,
Rose Malmberg
169 East Loma Alta Drive
Altadena, CA 91001

Edwards, Dean

From: myszania@aol.com
Sent: Tuesday, February 08, 2011 6:12 PM
To: Edwards, Dean
Subject: Project: R2010-00090(5); Permit: RCUP201000014

My name is Ann Haigwood and I live at 3528 McNally Ave. I received information that there is a proposal to have a cell tower placed at 147 E. Loma Alta Dr., Altadena, CA. I AM STRONGLY OPPOSED TO THIS CONSTRUCTION AND WILL ACTIVELY OPPOSE IT.

My husband and I purchased our home 2 years ago. The construction of the project will devalue our home incredibly. Moreover, it will devalue ALL the properties in our neighborhood. It will be ugly, unsightly, and look awkwardly inappropriate.

I am also extremely concerned about the harmful effects from the proximity of this tower to my house. My yard faces the wash where the tower is being proposed. Without any additional environmental testing or medical expert information of how this will affect my health, my husband's health, and the health of the children in our neighborhood, this tower CANNOT BE BUILT HERE.

Additionally, there is a high risk of fire. Last year we had to evacuate because of the fires in the hills. This tower poses a huge fire hazard to our homes and property.

Again, I and all of my neighbors, will ACTIVELY oppose the building of the tower in this location. There are a number of options that are not harmful to persons or property, and that will not devalue the neighborhood. Please consider building in the hills next to existing towers already there.

I can be reached at this email address or by phone at 818-437-7823.
Thank you for your time.

Sincerely,
Ann Haigwood.

2/9/11
Item #8 - RPC
R 2010-00090-5
D. Edwards
R-Ruiz

583 F.3d 716 (2009)

SPRINT PCS ASSETS, L.L.C., a Delaware limited liability company, wholly-owned by Sprint Telephony PCS, LP, a Delaware limited partnership, Plaintiff-Appellee,
v.
CITY OF PALOS VERDES ESTATES, a California municipality; City Council of the City of Palos Verdes Estates, its governing body; Joseph Sherwood, in his official capacity as Mayor Pro Tem of the City of Palos Verdes Estates; John Flood, in his official capacity as Councilmember of the City of Palos Verdes Estates; Rosemary Humphrey, in her official capacity as Councilmember of the City of Palos Verdes Estates; Dwight Abbott, in his official capacity as Councilmember of the City of Palos Verdes Estates; James F. Goodhart, in his official capacity as Councilmember of the City of Palos Verdes Estates, Defendants-Appellants.

No. 05-56106.

United States Court of Appeals, Ninth Circuit.

Argued and Submitted July 6, 2009.
Filed October 14, 2009.

719 *719 Scott J. Grossberg, Richard R. Clouse, Amy R. von Kelsch-Berk, and Angelica A. Arias of Cihigoyenetche, Grossberg & Clouse, Ranco Cucamonga, CA, and Daniel P. Barer of Pollak, Vida & Fisher, Los Angeles, CA, for the appellants.

John J. Flynn III, Gregory W. Sanders, and Michael W. Shonafelt of Nossaman, Guthner, Knox & Elliott, LLP, Irvine, CA, for the appellee.

Before: BARRY G. SILVERMAN, KIM McLANE WARDLAW, and JAY S. BYBEE, Circuit Judges.

WARDLAW, Circuit Judge:

The City of Palos Verdes Estates ("City") appeals the grant of summary judgment in favor of Sprint PCS Assets, L.L.C. ("Sprint"). We must decide whether the district court erred in concluding that the City violated the Telecommunications Act of 1996 ("TCA"), Pub.L. No. 104-104, 110 Stat. 56 (codified as amended in various sections of U.S.C. titles 15, 18, and 47), when it denied Sprint permission to construct two wireless telecommunications facilities in the City's public rights-of-way. Specifically, we must decide (1) whether the City's denial is supported by substantial evidence, as required by 47 U.S.C. § 332(c)(7)(B)(iii), and (2) whether the City's denial constitutes a prohibition on the provision of wireless service in violation of 47 U.S.C. §§ 253(a) and 332(c)(7)(B)(i)(II). Because the City's denial is supported by substantial evidence, and because disputed issues of material fact preclude a finding that the decision amounted to a prohibition on the provision of wireless service, we reverse and remand.

I. FACTUAL AND PROCEDURAL BACKGROUND

The City is a planned community, about a quarter of which consists of public rights-of-way that were designed not only to serve the City's transportation needs, but also to contribute to its aesthetic appeal. In 2002 and 2003, Sprint applied for permits to construct wireless telecommunications facilities ("WCF") in the City's public rights-of-way. The City granted eight permit applications but denied two others, which are at issue in this appeal. One of the proposed WCFs would be constructed on Via Azalea, a narrow residential street, and the
720 other would be constructed *720 on Via Valmonte, one of the four main entrances to the City. Sprint acknowledged that it already served four thousand customers in the City with its existing network but stated that the proposed WCFs were nonetheless needed to replace its existing infrastructure.

A City ordinance ("Ordinance") provides that WCF permit applications may be denied for "adverse aesthetic impacts arising from the proposed time, place, and manner of use of the public property." Palos Verdes Estates, Cal., Ordinances ch. 18.55.040(B)(1). Under the Ordinance, the City's Public Works Director ("Director") denied Sprint's WCF permit applications, concluding that the proposed WCFs were not in keeping with the City's aesthetics. The City Planning Commission affirmed the Director's decision in a unanimous vote.

Sprint appealed to the City Council ("Council"), which received into evidence a written staff report that detailed the potential aesthetic impact of the proposed WCFs and summarized the results of a "drive test," which confirmed that cellular service from Sprint was already available in relevant locations in the City. The Council also heard public comments and a presentation from Sprint's representatives. The Council issued a resolution affirming the denial of Sprint's permit applications. It concluded that a WCF on Via Azalea would disrupt the residential ambiance of the neighborhood and that a WCF on Via Valmonte would detract from the natural beauty that was valued at that main entrance to the City.

Denied permits by the Director, the Commission, and the Council, Sprint took its case to federal court, seeking a declaration that the City's decision violated various provisions of the TCA. The district court concluded that the City's decision was not supported by substantial evidence and thus violated 47 U.S.C. § 332(c)(7)(B)(iii). This determination was premised on a legal conclusion that California law prohibits the City from basing its decision on aesthetic considerations. The district court also concluded that the City violated 47 U.S.C. §§ 253 and 332(c)(7)(B)(i)(II) by unlawfully prohibiting the provision of telecommunications service, finding that the City had prevented Sprint from closing a significant gap in its coverage. The City timely appeals.

II. JURISDICTION AND STANDARD OF REVIEW

The district court exercised jurisdiction pursuant to 28 U.S.C. § 1331. We have jurisdiction pursuant to 28 U.S.C. § 1291. "We review summary judgment de novo." *Nelson v. City of Davis*, 571 F.3d 924, 927 (9th Cir.2009) (citation omitted). Summary judgment is appropriate only if the pleadings, the discovery, disclosure materials on file, and affidavits show that there is no genuine dispute as to any material fact and that the moving party is entitled to judgment as a matter of law. Fed. R.Civ.P. 56(c). All justifiable factual inferences must be drawn in the City's favor, and we must reverse the grant of summary judgment if any rational trier of fact could resolve a material factual issue in the City's favor. *See Nelson*, 571 F.3d at 927.

III. DISCUSSION

The tension between technological advancement and community aesthetics is nothing new. In an 1889 book that would become a classic in city planning literature, Vienna's Camillo Sitte lamented:

> [T]here still remains the question as to whether it is really necessary to purchase these [technological] advantages at the tremendous price of
> 721 abandoning all artistic beauty in the layout of cities. *721 The innate conflict between the picturesque and the practical cannot be eliminated merely by talking about it; it will always be present as something intrinsic to the very nature of things.

Camillo Sitte, City Planning According to Artistic Principles 110 (Rudolph Wittkower ed., Random House 1965) (1889).

The TCA attempts to reconcile this "innate conflict." On the one hand, the statute is intended to "encourage the rapid deployment of new telecommunications technologies." Pub.L. No. 104-104, 110 Stat. 56. On the other hand, it seeks "to preserve the authority of State and local governments over zoning and land use matters." *T-Mobile USA, Inc. v. City of Anacortes*, 572 F.3d 987, 992 (9th Cir.2009) (citation omitted). The TCA seeks a balance by placing certain limitations on localities' control over the construction and modification of WCFs. *See* 47 U.S.C. §§ 253(a), 332(c)(7)(B). This appeal involves a challenge to the district court's conclusion that the City exceeded those limitations.

A. Section 332(c)(7)(B)(iii)

One of the limitations that the TCA places upon local governments is that "[a]ny decision ... to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record." 47 U.S.C. § 332 (c)(7)(B)(iii). As we have explained, "The upshot is simple: this Court may not overturn the [City's] decision on `substantial evidence' grounds if that decision is authorized by applicable local regulations and supported by a reasonable amount of evidence." *MetroPCS, Inc. v. City & County of S.F.*, 400 F.3d 715, 725 (9th Cir.2005).[1] Thus, we must determine (1) whether the City's decision was authorized by local law and, if it was, (2) whether it was supported by a reasonable amount of evidence. Both requirements are satisfied here.

1. The City's decision was authorized by local law.

"[W]e must take applicable state and local regulations as we find them and evaluate the City decision's evidentiary support (or lack thereof) relative to those regulations." *MetroPCS*, 400 F.3d at 724. As noted above, the Ordinance authorizes the denial of WCF permit applications on aesthetic grounds. Also relevant for our purposes is the California Public Utilities Code ("PUC"), which provides telecommunications companies with a right to construct WCFs "in such manner and at such points as not to incommode the public use of the road or highway," Cal. Pub. Util. Code § 7901, and states that "municipalities shall have the right to exercise reasonable control as to the time, place, and manner in which roads, highways, and waterways are accessed." *Id.* § 7901.1. The district court erred in concluding that the City's
722 consideration of aesthetics was invalid under the PUC.[2] The California Constitution *722 gives the City the authority to regulate local aesthetics, and neither PUC § 7901 nor PUC § 7901.1 divests it of that authority.

i. California's Constitution

The California Constitution authorizes local governments to "make and enforce within [their] limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws." Cal. Const. art. XI, § 7. California's Supreme Court has explained that a "'city's police power under this provision can be applied only within its own territory and is subject to displacement by general state law but otherwise is as broad as the police power exercisable by the Legislature itself.'" *Fisher v. City of Berkeley*, 37 Cal.3d 644, 209 Cal.Rptr. 682, 693 P.2d 261, 271 (1984) (quoting *Birkenfeld v. City of Berkeley*, 17 Cal.3d 129, 130 Cal.Rptr. 465, 550 P.2d 1001, 1009 (1976)); *see also Conn. Indem. Co. v. Super. Ct. of San Joaquin County*, 23 Cal.4th 807, 98 Cal.Rptr.2d 221, 3 P.3d 868, 872 (2000) (state constitution provides city with "general authority to exercise broad police powers"). There is no question that the City's authority to regulate aesthetics is contained within this broad constitutional grant of power. *See Landgate, Inc. v. Cal. Coastal Comm'n*, 17 Cal.4th 1006, 73 Cal.Rptr.2d 841, 953 P.2d 1188, 1198 (1998) (aesthetic preservation is "unquestionably [a] legitimate government purpose[ ]"); *Ehrlich v. City of Culver City*, 12 Cal.4th 854, 50 Cal.Rptr.2d 242, 911 P.2d 429, 450 (1996) ("[A]esthetic conditions have long been held to be valid exercises of the city's traditional police power.").

Thus, the threshold issue is not, as Sprint argues and the district court apparently believed, whether the PUC authorizes the City to consider aesthetics in deciding whether to grant a WCF permit application, but is instead whether the PUC divests the City of its constitutional
723 power to do so.[3] Therefore, the question *723 actually before us is whether the City's consideration of aesthetics is "in conflict with general laws." Cal. Const. art. XI, § 7. "A conflict exists if the local legislation duplicates, contradicts, or enters an area fully occupied by ... legislative implication." *Action Apartment Ass'n, Inc. v. City of Santa Monica*, 41 Cal.4th 1232, 63 Cal.Rptr.3d 398, 163 P.3d 89, 96 (2007) (citation and quotation omitted). "Local legislation is contradictory to general law when it is inimical thereto." *Id.* (citation and quotation omitted). Absent a specific legislative indication to the contrary, we presume that there is no conflict where the local government regulates an area over which it has traditionally exercised control. *See id.* Sprint has the burden of demonstrating that a conflict exists. *See id.* We conclude that neither PUC § 7901 nor PUC § 7901.1 conflicts with the City's default power to deny a WCF permit application for aesthetic reasons.

ii. PUC § 7901

The City's consideration of aesthetics in denying Sprint's WCF permit applications comports with PUC § 7901, which provides telecommunications companies with a right to construct WCFs "in such manner and at such points as not to incommode the public use of the road or highway." Cal. Pub. Util.Code § 7901. To "incommode" the public use is to "subject [it] to inconvenience or discomfort; to trouble, annoy, molest, embarrass, inconvenience" or "[t]o affect with inconvenience, to hinder, impede, obstruct (an action, etc.)." 7 The Oxford English Dictionary 806 (2d ed.1989); *see also* Webster's New Collegiate Dictionary 610 (9th ed. 1983) ("To give inconvenience or distress to."). The experience of traveling along a picturesque street is different from the experience of traveling through the shadows of a WCF, and we see nothing exceptional in the City's determination that the former is less discomforting, less troubling, less annoying, and less distressing than the latter. After all, travel is often as much about the journey as it is about the destination.

The absence of a conflict between the City's consideration of aesthetics and PUC § 7901 becomes even more apparent when one recognizes that the "public use" of the rights-of-way is not limited to travel. It is a widely accepted principle of urban planning that streets may be employed to serve important social, expressive, and aesthetic functions. *See* Ray Gindroz, *City Life and New Urbanism*, 29 Fordham Urb. L.J. 1419, 1428 (2002) ("A primary task of all urban architecture and landscape design is the physical definition of streets and public spaces as places of shared use."); Kevin Lynch, The Image of the City 4 (1960) ("A vivid and integrated physical setting, capable of producing a sharp image, plays a social role as well. It can furnish the raw material for the symbols and collective memories of group communication."); Camillo Sitte, City Planning According to Artistic Principles 111-12 (Rudolph Wittkower ed., Random House 1965) (1889) ("One must keep in mind that city planning in particular must allow full and complete participation to art, because it is this type
724 of artistic endeavor, above *724 all, that affects formatively every day and every hour of the great mass of the population...."). As Congress and the California Legislature have recognized, the "public use" of the roads might also encompass recreational functions. *See, e.g.*, Cal. Pub. Util.Code § 320 (burying of power lines along scenic highways); 23 U.S.C. § 131(a) (regulation of billboards near highways necessary "to promote ... recreational value of public travel ... and to preserve natural beauty").

These urban planning principles are applied in the City, where the public rights-of-way are the visual fabric from which neighborhoods are made. For example, the City's staff report explains that Via Valmonte, which is adorned with an historic stone wall and borders a park, is "cherished for its rural character, and valued for its natural, unspoiled appearance, rich with native vegetation." Meanwhile, Via Azalea is described as "an attractive streetscape" that creates a residential ambiance. That the "public use" of these rights-of-way encompasses more than just transit is perhaps most apparent from residents' letters to the Director, which explained that they "moved to Palos Verdes for its [a]esthetics" and that they "count on this city to protect [its] unique beauty with the abundance of trees, the absence of sidewalks, even the lack of street lighting."

Thus, there is no conflict between the City's consideration of aesthetics in deciding to deny a WCF permit application and PUC § 7901's statement that telecommunications companies may construct WCFs that do not incommode the public use of the rights-of-way.

iii. PUC § 7901.1

Nor does the City's consideration of aesthetics conflict with PUC § 7901.1's statement that "municipalities shall have the right to exercise reasonable control as to the time, place, and manner in which roads, highways, and waterways are accessed." Cal. Pub. Util.Code § 7901.1. That provision was added to the PUC in 1995 to "bolster the cities' abilities with regard to construction management and to send a message to telephone corporations that cities have authority to manage their construction, without jeopardizing the telephone corporations' statewide franchise." S. Comm. on Energy, Utilities, and Commerce, Analysis of S.B. 621, Reg. Sess., at 5728 (Cal.1995); *see also id.* ("[I]ntent of this bill is to provide the cities with some control over their streets.").[4] If the preexisting language of PUC § 7901 did not divest cities of the authority to consider aesthetics in denying WCF construction permits, then, a fortiori, neither does the language of PUC § 7901.1, which only "bolsters" cities' control.

725 Aesthetic regulations are "time, place, and manner" regulations,[5] and the California *725 Legislature's use of the phrase "are accessed" in PUC § 7901.1 does not change that conclusion in this context. Sprint argues that the "time, place and manner" in which the rights-of-way "are accessed" can refer only to when, where, and how telecommunications service providers gain entry to the public rights-of-way. We do not disagree. However, a company can "access" a city's rights-ofway in both aesthetically benign and aesthetically offensive ways. It is certainly within a city's authority to permit the former and not the latter.[6]

Our interpretation of California law is consistent with the outcome in *City of Anacortes,* in which we rejected a § 332(c)(7)(B)(iii) challenge to a city's denial of a WCF permit application that was based on many of the same aesthetic considerations at issue here. *City of Anacortes,* 572 F.3d at 994-95. There, the city determined that the proposed WCF would have "a commercial appearance and would detract from the residential character and appearance of the surrounding neighborhood"; that it "would not be compatible with the character and appearance of the existing development"; and that it would "negatively impact the views" of residents. *Id.* at 989-90. We noted that the city ordinance governing permit applications required the city to consider such factors as the height of the tower and its proximity to residential structures, the nature of uses of nearby properties, the surrounding topography, and the surrounding tree coverage and foliage. *Id.* at 994. We stated that "[w]e, and other courts, have held that these are legitimate concerns for a locality." *Id.* (citing *T-Mobile Cent., LLC v. Unified Gov't of Wyandotte County, Kan. City,* 546 F.3d 1299, 1312 (10th Cir.2008); *Cellular Tel. Co. v. Town of Oyster Bay,* 166 F.3d 490, 494 (2d Cir.1999)). What was implicit in our decision in *City of Anacortes* we make explicit now: California law does not prohibit local governments from taking into account aesthetic considerations in deciding whether to permit the development of WCFs within their jurisdictions.

Sprint warns that this conclusion will allow municipalities to run roughshod over WCF permit applications simply by invoking aesthetic concerns. However, our decision in no way relieves municipalities of the constraints imposed upon them by the TCA. A city that invokes aesthetics as a basis for a WCF permit denial is required to produce substantial evidence to support its decision, and, even if it makes that showing, its decision is nevertheless invalid if it operates as a prohibition on the provision of wireless service in violation of 47 U.S.C. § 332(c)
726 (7)(B)(i)(II). Nor does our *726 decision constitute a judgment on the merits of the City's decision in this case. Our function is not to determine whether the City's denial of Sprint's permit applications was a proper weighing of all the benefits (e.g., economic opportunities, improved service, public safety) and costs (e.g., the ability of residents to enjoy their community) of the proposal, but is instead to determine whether the City violated any provision of the TCA in so doing.

2. The City's decision was supported by such relevant evidence that a reasonable mind might accept as adequate.

"[W]hile the term `substantial evidence' is not statutorily defined in the Act, the legislative history of the TCA explicitly states, and courts have accordingly held, that this language is meant to trigger `the traditional standard used for judicial review of agency decisions.'" *MetroPCS,* 400 F.3d at 723 (quoting H.R. Conf. Rep. No. 104-458, at 208 (1996), U.S.Code Cong. & Admin.News 1996, p. 10). A municipality's decision that is valid under local law will be upheld under the TCA's "substantial evidence" requirement where it is supported by "`such

relevant evidence as a reasonable mind might accept as adequate to support a conclusion.'" *Id.* at 725 (quoting Town of Oyster Bay, 166 F.3d at 494).

The City's finding that the proposed WCFs would adversely affect its aesthetic makeup easily satisfies this standard. The Council reviewed propagation maps and mock-ups of the proposed WCFs and a report that detailed the aesthetic values at stake. It had the benefit of public comments and an oral presentation from Sprint's personnel. From the entirety of the evidence, one could reasonably determine, as the City did, that the Via Azalea WCF would detract from the residential character of the neighborhood and that the Via Valmonte WCF would not be in keeping with the appearance of that main entrance to the City. Consequently, we find that the City's decision was supported by substantial evidence, and we reverse the district court.

B. Section 332(c)(7)(B)(i)(II)

The TCA provides that a locality's denial of a WCF permit application "shall not prohibit or have the effect of prohibiting the provision of personal wireless services." 47 U.S.C. § 332(c)(7)(B)(i)(II). "[A] locality can run afoul of the TCA's `effective prohibition' clause if it prevents a wireless provider from closing a `significant gap' in service coverage." MetroPCS, 400 F.3d at 731.[7] The "effective prohibition" inquiry "involves a two-pronged analysis requiring (1) the showing of a `significant gap' in service coverage and (2) some inquiry into the feasibility of alternative facilities or site locations."[8] *Id.* at 731. Because we conclude that Sprint has not shown the existence of a significant gap as a matter of law, we do not reach the second element of the analysis.

727 The district court's legal conclusion that Sprint established the existence *727 of a "significant gap" rests on two purportedly undisputed facts: (1) "[w]ithout either facility, [Sprint's] network will contain significant gaps in coverage" and (2) existing wireless coverage in the City was "based on obsolete facilities needing replacement." These factual findings were insufficient to support summary judgment because they were disputed in the record below.

1. Significance of the Gap

"`[S]ignificant gap' determinations are extremely fact-specific inquiries that defy any bright-line legal rule." *Id.* at 733. Yet Sprint and the district court take a bare-bones approach to this inquiry. The district court simply declared, as a matter of fact and fiat, that there was "a significant gap" in Sprint's coverage in the City. Sprint defends this factual finding on appeal, arguing that its presentation of radio frequency propagation maps was sufficient to establish a "significant gap" in coverage. We disagree.

Sprint's documentation stated that the proposed WCFs would provide "good coverage" for .2 to .4 miles in various directions. However, it remains far from clear whether these estimates were relative to the coverage available from existing WCFs or to the coverage that would be available if there were no WCFs at all (i.e., if the existing WCFs were removed). In any event, that there was a "gap" in coverage is certainly not sufficient to establish that there was a "significant gap" in coverage. *See id.* at 733 n. 10 ("[T]he relevant service gap must be truly `significant....'"); *id.* at 733 ("The TCA does not guarantee wireless service providers coverage free of small `dead spots....'").

The district court found that there was a "gap" in Sprint's coverage but failed to analyze its legal significance. District courts have considered a wide range of context-specific factors in assessing the significance of alleged gaps. *See, e.g.*, Cellular Tel. Co. v. Zoning Bd. of Adjustment of the Borough of Ho-Ho-Kus, 197 F.3d 64, 70 n. 2 (3d Cir.1999) (whether gap affected significant commuter highway or railway); *Powertel/Atlanta, Inc. v. City of Clarkston*, No. 1:05-CV-3068, 2007 WL 2258720, at *6 (N.D.Ga. Aug.3, 2007) (assessing the "nature and character of that area or the number of potential users in that area who may be affected by the alleged lack of service"); Voice Stream PCS I, LLC v. City of Hillsboro, 301 F.Supp.2d 1251, 1261 (D.Or.2004) (whether facilities were needed to improve weak signals or to fill a complete void in coverage); Nextel Partners, Inc. v. Town of Amherst, 251 F.Supp.2d 1187, 1196 (W.D.N.Y.2003) (gap covers well traveled roads on which customers lack roaming capabilities); Am. Cellular Network Co., LLC v. Upper Dublin Twp., 203 F.Supp.2d 383, 390-91 (E.D.Pa.2002) (considering "drive tests"); Sprint Spectrum, L.P. v. Town of Ogunquit, 175 F.Supp.2d 77, 90 (D.Me.2001) (whether gap affects commercial district); *APT Minneapolis, Inc. v. Stillwater Twp.*, No. 00-2500, 2001 WL 1640069, at *2-3 (D.Minn. June 22, 2001) (whether gap poses public safety risk). Here, the district court said nothing about the gap from which it could have determined its relative significance (i.e., whether preventing its closure was tantamount to a prohibition on telecommunications service), nor did Sprint's counsel offer any support for a conclusion that the gap was significant.[9]

728 *728 ***2. Obsolescence of Existing WCF Network***

We need not decide whether the TCA's anti-prohibition language even covers situations, like that presented here, in which a telecommunications service provider seeks to replace existing WCFs, as contrasted with the more typical situation in which the provider seeks to construct new WCFs. It is sufficient to note that the record does not establish the obsolescence of the old facilities as a matter of uncontested fact. Sprint's representatives not only failed to explain why the existing facilities were no longer usable, but they actually undermined that position by pointing out that those facilities were currently serving some four thousand residents and acknowledging at the public hearing that Sprint service was generally available in the City.

Residents' comments at the public hearing and the drive test results contained in the staff report submitted to the Council further illustrate that Sprint's existing network was, at the very least, functional. Consequently, we reverse the grant of summary judgment in Sprint's favor on its § 332(c)(7)(B)(i)(II) "effective prohibition" claim.

C. Section 253

The district court also concluded that the City's ordinance was "preempted by the Supremacy Clause, insofar as it conflicts with section 253(a) of the Telecom Act." However, due to intervening changes in the law, this Supremacy Clause claim is no longer viable. *See* Sprint Telephony PCS, L.P. v. County of San Diego, 543 F.3d 571, 578 (9th Cir.2008) (en banc) (overruling City of Auburn v. Qwest Corp., 260 F.3d 1160 (9th Cir.2001), and holding that "a plaintiff suing a municipality under section 253(a) must show actual or effective prohibition, rather than the mere possibility of prohibition" (citation omitted)); *see also* City of Anacortes, 572 F.3d at 993. Moreover, we need not decide whether § 253 contemplates "as applied" challenges. Insofar as Sprint seeks to advance an "as applied" challenge under § 253, we conclude, for the reasons set forth above, that Sprint has not demonstrated a prohibition on the provision of wireless service as a matter of law. *See* Sprint Telephony, 543 F.3d at 579 ("We need not decide whether Sprint's suit falls under § 253 or § 332. As we now hold, the legal standard is the same under either.").

IV. CONCLUSION

Because the City's decision to deny Sprint's application for a permit to construct two new WCFs was supported by substantial evidence and because disputed issues of material fact preclude a finding that the decision constituted a prohibition on the provision of wireless service, we REVERSE and REMAND.

[1] The district court did not have the benefit of our decision in *MetroPCS* when it issued its order granting Sprint summary judgment on its claims under 47 U.S.C. §§ 253 and 332(c)(7)(B)(iii). Indeed, there has been considerable development in this area of the law since the district court resolved Sprint's motion. *See, e.g.*, Sprint Telephony PCS, L.P. v. County of San Diego, 543 F.3d 571 (9th Cir. 2008); City of Anacortes, 572 F.3d at 987.

[2] During the pendency of this appeal, pursuant to Cal. R. Ct. 8.548(a), we requested that the California Supreme Court decide whether PUC §§ 7901 and 7901.1 permit public entities to regulate the placement of telephone equipment in public rights-of-way on aesthetic grounds. The California Supreme Court denied our request, concluding that a decision on that issue may not be determinative in these federal proceedings. Accordingly, the task now before us is to predict how the California Supreme Court would resolve the issue. *See* Giles v. Gen. Motors Acceptance Corp., 494 F.3d 865, 872 (9th Cir.2007). We may look to the state's intermediate appellate courts for guidance. *Id.* While the question of whether California's municipalities have the power to consider aesthetics in deciding whether to grant WCF permit applications has been addressed by us and the California Courts of Appeals, it has not been resolved in a published opinion on which we may rely. *See* Sprint PCS Assets, L.L.C. v. City of La Cañada Flintridge, 182 Fed.Appx. 688, 690-91 (9th Cir.2006) (city may not consider aesthetics); Sprint Telephony PCS v. County of San Diego, 44 Cal.Rptr.3d 754, 764-66 (Cal.Ct. App.2006) (city may consider aesthetics) *superseded by* 49 Cal.Rptr.3d 653, 143 P.3d 654 (Cal.2006); *see also* 9th Cir. R. 36-3 (unpublished dispositions are not precedent); Cal. R. Ct. 8.1115 (no citation or reliance on unpublished opinions).

[3] Sprint urges us to approach the question differently, relying on language from Western Union Tel. Co. v. Hopkins, 160 Cal. 106, 116 P. 557 (1911), that

[i]t is universally recognized that the state in its sovereign capacity has the original right to control all public streets and highways, and that except in so far as that control is relinquished to municipalities by the state, either by provision of the state constitution or by legislative act not inconsistent with the Constitution, it remains with the state legislature.

Id. at 562. The defect in Sprint's argument is that it contemplates a relinquishment of state sovereignty through statute only, thus turning a blind eye to the constitutional grant of power contained in Cal. Const. art. XI, § 7. Our observation that the City possesses constitutionally based police powers over aesthetics is entirely consistent with the *Hopkins* court's recognition that the utility companies' right to construct telegraph facilities remained subject to "the lawful exercise by the city of such rights in regard to such use as it has under the police power." *Hopkins*, 116 P. at 563; *see also id.* at 562 (city retains power to do "such things in regard to the streets and the use thereof as were justified in the legitimate exercise of the police power"); *see also* Pac. Tel. & Tel. Co. v. City & County of S.F., 51 Cal.2d 766, 336 P.2d 514, 519 (1959) (telephone franchise is a matter of state concern but city still controls the particular location and manner in which public utility facilities are constructed in the streets). The *Hopkins* court refrained from articulating the scope of the city's police powers because, unlike in this appeal, that was "a question in no way involved in [the] case." *Hopkins*, 116 P. at 562-63.

[4] We cite the legislative history only to put the statute in its historical context; we do not rely upon it to discern the statute's meaning.

[5] In the First Amendment context, California courts have recognized that governments' aesthetic-based regulations fall within the rubric of "time, place, and manner" regulations. *See, e.g.*, Showing Animals Respect & Kindness v. City of W. Hollywood, 166 Cal. App.4th 815, 83 Cal.Rptr.3d 134, 141 (2008) (ordinance with declared purpose of improving city aesthetics was valid time, place, and manner regulation); Union of Needletrades, AFL-CIO v. Super. Ct. of L.A. County, 56 Cal. App.4th 996, 65 Cal.Rptr.2d 838, 850-51 (1997) (requirement that leaflets comport with mall's general aesthetics constituted valid time, place, and manner regulation). We see no principled basis on which to distinguish aesthetic "time, place, and manner" regulations in the First Amendment context from aesthetic "time, place, and manner" regulations in the context of PUC § 7901.1.

[6] Our conclusion that the language of PUC § 7901.1 does not conflict with the City's consideration of aesthetics in denying WCF permit applications is supported by the California Legislature's use of materially identical language in the California Coastal Act, which provides that:

The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to... [t]he need to provide for the management of access areas so as to protect . . . the aesthetic values of the area by providing for the collection of litter.

Cal. Pub. Res.Code § 30214(a)(4). If Sprint's narrow interpretation of PUC § 7901.1 were correct, it would follow that, in the California Coastal Act, the Legislature explicitly stated that the need to regulate the time, place, and manner of access depends on the need to protect aesthetic values, but that, in PUC § 7901.1, the Legislature meant to say that control over the time, place, and manner of access excluded control over aesthetics. We see no reason to ascribe this inconsistency to the California Legislature, however.

[7] We focus on the "effective prohibition" clause because the City has not adopted a "general ban" on wireless services.

See MetroPCS, 400 F.3d at 731. To the contrary, the City's ordinance contemplates the construction of WCFs, and the City has repeatedly granted permits for WCF construction in the past.

[8] We have adopted the "multiple provider rule," which focuses the "significant gap" inquiry on the issue of whether a particular provider is prevented from filling a significant gap in its own service coverage; the availability of wireless service from other providers in the area is irrelevant for purposes of this analysis. *MetroPCS*, 400 F.3d at 733.

[9] During oral argument, Sprint's counsel was unable to explain satisfactorily on what basis the district court found that the gap was significant. He acknowledged that there was a dispute as to the significance of the gap in Sprint's coverage within the City, and he even conceded that he had seen nothing in the record that led him to believe that the matter was uncontested.

Sprint Telephony PCS, LP v. County of San Diego, 543 F. 3d 571 - Court of Appeals, 9th Circuit 2008

543 F.3d 571 (2008)

SPRINT TELEPHONY PCS, L.P., a Delaware limited partnership, Plaintiff-Appellant/Cross-Appellee, and Pacific Bell Wireless LLC, a Nevada limited liability company, dba Cingular Wireless, Plaintiff,
v.
COUNTY OF SAN DIEGO, a division of the State of California; Greg Cox, in his capacity as a supervisor of the County of San Diego; Dianne Jacob, in her capacity as a supervisor of the County of San Diego; Pam Slater, in her capacity as a supervisor of the County of San Diego; Ron Roberts, in his capacity as a supervisor of the County of San Diego; Bill Horn, in his capacity as a supervisor of the County of San Diego, Defendants-Appellees/Cross-Appellants.

Item 8- RPC 2/9/11
R2010-00090-5
D. Edwards
R. Ruiz

Nos. 05-56076, 05-56435.

United States Court of Appeals, Ninth Circuit.

Argued and Submitted June 24, 2008.
Filed September 11, 2008.

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Before: ALEX KOZINSKI, Chief Judge, and ANDREW J. KLEINFELD, HAWKINS, A. WALLACE TASHIMA, SIDNEY R. THOMAS, BARRY G. SILVERMAN, SUSAN P. GRABER, RONALD M. GOULD, MARSHA S. BERZON, RICHARD C. TALLMAN, and JAY S. BYBEE, Circuit Judges.

OPPONENT SUBMITTED TO RPC AT HEARING

Opinion by Judge GRABER; Concurrence by Judge GOULD.

GRABER, Circuit Judge:

The Telecommunications Act of 1996, Pub.L. No. 104-104, 110 Stat. 56 (codified as amended in U.S.C. Titles 15, 18 & 47) ("the Act"), precludes state and local governments from enacting ordinances that prohibit or have the effect of prohibiting the provision of telecommunications services, including wireless services. In 2003, Defendant County of San Diego enacted its Wireless Telecommunications Facilities ordinance. San Diego County Ordinance No. 9549, § 1 (codified as San Diego County Zoning Ord. §§ 6980-6991, 7352
574 ("the Ordinance")). The Ordinance imposes restrictions *574 and permit requirements on the construction and location of wireless telecommunications facilities. Plaintiff Sprint Telephony PCS alleges that, on its face, the Ordinance prohibits or has the effect of prohibiting the provision of wireless telecommunications services, in violation of the Act. The district court permanently enjoined the County from enforcing the Ordinance, and a three-judge panel of this court affirmed. *Sprint Telephony PCS, L.P. v. County of San Diego*, 490 F.3d 700 (9th Cir.2007). We granted rehearing en banc, 527 F.3d 791 (9th Cir.2008), and we now reverse.

FACTUAL AND PROCEDURAL HISTORY

The County of San Diego enacted the Ordinance "to establish comprehensive guidelines for the placement, design and processing of wireless telecommunications facilities in all zones within the County of San Diego." San Diego County Ordinance No. 9549, § 1. The Ordinance categorizes applications for wireless telecommunications facilities into four tiers, depending primarily on the visibility and location of the proposed facility. San Diego County Zoning Ordinance § 6985. For example, an application for a low-visibility structure in an industrial

zone generally must meet lesser requirements than an application for a large tower in a residential zone. *Id.*

Regardless of tier, the Ordinance imposes substantive and procedural requirements on applications for wireless facilities. For example, non-camouflaged poles are prohibited in residential and rural zones; certain height and setback restrictions apply in residential zones; and no more than three facilities are allowed on any site, unless "a finding is made that colocation of more facilities is consistent with community character." *Id.* An applicant is required to identify the proposed facility's geographic service area, to submit a "visual impact analysis," and to describe various technical attributes such as height, maintenance requirements, and acoustical information, although some exceptions apply. *Id.* § 6984. The proposed facility must be located within specified "preferred zones" or "preferred locations," unless those locations are "not technologically or legally feasible" or "a finding is made that the proposed site is preferable due to aesthetic and community character compatibility." *Id.* § 6986. The proposed facility also must meet many design requirements, primarily related to aesthetics. *Id.* § 6987. The applicant also must perform regular maintenance of the facility, including graffiti removal and proper landscaping. *Id.* § 6988.

General zoning requirements also apply. For example, hearings are conducted before a permit is granted, *id.* § 7356, and on appeal, if requested, *id.* § 7366(h). Before a permit is granted, the zoning board must find:

> That the location, size, design, and operating characteristics of the proposed use will be compatible with adjacent uses, residents, buildings, or structures, with consideration given to:
>
> 1. Harmony in scale, bulk, coverage and density;
>
> 2. The availability of public facilities, services and utilities;
>
> 3. The harmful effect, if any, upon desirable neighborhood character;
>
> 4. The generation of traffic and the capacity and physical character of surrounding streets;
>
> 5. The suitability of the site for the type and intensity of use or development which is proposed; and to
>
> 6. Any other relevant impact of the proposed use[.]

575 *575 *Id.* § 7358(a). The decision-maker retains discretionary authority to deny a use permit application or to grant the application conditionally. *Id.* § 7362.

Soon after the County enacted the Ordinance, Sprint brought this action, alleging that the Ordinance violates 47 U.S.C. § 253(a)[1] because, on its face, it prohibits or has the effect of prohibiting Sprint's ability to provide wireless telecommunications services. Sprint sought injunctive and declaratory relief under the Supremacy Clause and 28 U.S.C. § 1331, and damages and attorney fees under 42 U.S.C. § 1983. The County argued that § 253(a) did not apply to the Ordinance, because 47 U.S.C. § 332(c)(7) exclusively governs wireless regulations, and that, in any event, the Ordinance is not an effective prohibition on the provision of wireless services. The County also argued that damages and attorney fees are unavailable because Congress did not create a private right of action enforceable under 42 U.S.C. § 1983.

The district court first held that facial challenges to a local government's wireless regulations could be brought under either § 253(a) or § 332(c)(7), because neither is exclusive. The district court next held, relying on our decision in *City of Auburn v. Qwest Corp.*, 260 F.3d 1160 (9th Cir. 2001), that the Ordinance violated § 253(a). The district court therefore permanently enjoined the County from enforcing the Ordinance against Sprint. Finally, the district court held that a claim under 42 U.S.C. § 1983 for a violation of § 253(a) was not cognizable and granted summary judgment to the County on that claim. The parties cross-appealed. A three-judge panel of this court affirmed, and we granted rehearing en banc.

STANDARDS OF REVIEW

We review for abuse of discretion the district court's grant of a permanent injunction, but review its underlying determinations "by the standard that applies to that determination." *Ting v. AT & T*, 319 F.3d 1126, 1134-35 (9th Cir.2003).

DISCUSSION

Sprint argues that, on its face, the Ordinance prohibits or has the effect of prohibiting the provision of wireless telecommunications services, in violation of the Act. As a threshold issue, the parties dispute *which* provision of the Act—47 U.S.C. § 253(a) or 47 U.S.C. § 332 (c)(7)(B)(i)(II)—applies to this case.

A. *The Effective Prohibition Clauses of 47*

U.S.C. § 253(a) and 47 U.S.C. § 332(c)(7)(B)(i)(II)

When Congress passed the Act, it expressed its intent "to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." 110 Stat. at 56; *see also* Ting, 319 F.3d at 1143 ("[T]he purpose of the... Act is to `provide for a pro-competitive, deregulatory national policy framework... by opening all telecommunications markets to competition.'" (quoting H.R.Rep. No. 104-458, at 113 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 124, 124)). The Act "represents a dramatic shift in the nature of telecommunications regulation." Cablevision of Boston, Inc. v. Pub. Improvement Comm'n, 184 F.3d 88, 97 (1st Cir.1999); *see also* Ting, 319
576 F.3d *576 at 1143 (characterizing the Act as a "dramatic break with the past"). Congress chose to "end[ ] the States' longstanding practice of granting and maintaining local exchange monopolies." AT & T Corp. v. Iowa Utils. Bd., 525 U.S. 366, 405, 119 S.Ct. 721, 142 L.Ed.2d 835 (1999) (Thomas, J., concurring in part, dissenting in part).

Congress did so by enacting 47 U.S.C. § 253, a new statutory section that preempts state and local regulations that maintain the monopoly status of a telecommunications service provider. *See* Cablevision of Boston, 184 F.3d at 98 ("Congress apparently feared that some states and municipalities might prefer to maintain the monopoly status of certain providers.... Section 253(a) takes that choice away from them...."). Section 253(a) states: "No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service."

The Act also contained new provisions applicable only to *wireless* telecommunications service providers. The House originally proposed legislation requiring the Federal Communications Commission ("FCC") to regulate directly the placement of wireless telecommunications facilities. *See* H.R.Rep. No. 104-204(I), § 107, at 94 (1995), *reprinted in* 1996 U.S.C.C.A.N. 10, 61. But the House and Senate conferees decided instead to "preserve [ ] the authority of State and local governments over zoning and land use matters except in the limited circumstances set forth in the conference agreement." H.R.Rep. No. 104-458, § 704, at 207-08 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 124, 222.

Accordingly, at the same time, Congress also enacted 47 U.S.C. § 332(c)(7). Section 332(c)(7)(A) preserves the authority of local governments over zoning decisions regarding the placement and construction of wireless service facilities, subject to enumerated limitations in § 332(c)(7)(B). One such limitation is that local regulations "shall not prohibit or have the effect of prohibiting the provision of personal wireless services." *Id.* § 332(c)(7)(B)(i)(II).

We have interpreted § 332(c)(7)(B)(i)(II) in accordance with its text. In MetroPCS, Inc. v. City of San Francisco, 400 F.3d 715, 730-31 (9th Cir.2005), we held that a locality runs afoul of that provision if (1) it imposes a "city-wide general ban on wireless services" or (2) it actually imposes restrictions that amount to an effective prohibition.

Our interpretation of § 253(a), however, has not hewn as closely to its nearly identical text. Again, § 253(a) states: "No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service." In *Auburn*, we became one of the first federal circuit courts to interpret that provision. We surveyed district court decisions and adopted their broad interpretation of its preemptive effect. *Auburn*, 260 F.3d at 1175-76. In the course of doing so, we quoted § 253(a) somewhat inaccurately, inserting an ellipsis in the text of § 253(a). *Id.* at 1175. We held that "[s]ection 253(a) preempts `regulations that not only "prohibit" outright the ability of any entity to provide telecommunications services, but also those that "may ... have the effect of prohibiting" the provision of such services.'" *Id.* (quoting Bell Atl.-Md., Inc. v. Prince George's County, 49 F.Supp.2d 805, 814 (D.Md.1999), *vacated and remanded on other grounds*, 212 F.3d 863 (4th Cir. 2000)); *see also* Qwest Commc'ns Inc. v. City of Berkeley, 433 F.3d 1253, 1258 (9th Cir.2006) (invalidating the locality's
577 regulations *577 because they "may have the effect of prohibiting telecommunications companies from providing services"); Qwest Corp. v. City of Portland, 385 F.3d 1236, 1241 (9th Cir.2004) (emphasizing that "regulations that *may* have the effect of prohibiting the provision of telecommunications services are preempted [by § 253(a)]"). It followed from that truncated version of the statute that, if a local regulation merely "create[s] a substantial ... barrier" to the provision of services or "allows a city to bar" provision of services, *Auburn*, 260 F.3d at 1176, then § 253(a) preempts the regulation. Applying that broad standard, we held that the municipal regulations at issue in *Auburn* were preempted because they imposed procedural requirements, charged fees, authorized civil and criminal penalties, and—"the ultimate cudgel"—reserved discretion to the city to grant, deny, or revoke the telecommunications franchises. *Id.*

Our expansive reading of the preemptive effect of § 253(a) has had far-reaching consequences. The *Auburn* standard has led us to invalidate several local regulations. *See Berkeley*, 433 F.3d at 1258 (holding that Berkeley's regulations were preempted by § 253(a)); *Portland*, 385 F.3d at 1239-42 (reversing the district court's holding that Portland's regulations survived preemption and remanding for additional analysis). Three of our sister circuits also have followed our broad interpretation of § 253(a), albeit with little discussion. *See* P.R. Tel. Co. v. Municipality of Guayanilla, 450 F.3d 9, 18 (1st Cir. 2006) (citing Qwest Corp. v. City of Santa Fe, 380 F.3d 1258, 1269 (10th Cir.2004)); *Santa Fe*, 380 F.3d at 1270 (quoting *Auburn*, 260 F.3d at 1176); TCG N.Y., Inc. v. City of White Plains, 305 F.3d 67, 76 (2d Cir.2002). Applying our *Auburn* standard, federal district courts have invalidated local regulations in tens of cases across this nation's towns and cities. *See, e.g.*, NextG Networks of Cal., Inc. v. County of Los Angeles, 522 F.Supp.2d 1240, 1253 (C.D.Cal.2007); TC Sys.,

Inc. v. Town of Colonie, 263 F.Supp.2d 471, 481-84 (N.D.N.Y.2003); *XO Mo., Inc. v. City of Maryland Heights*, 256 F.Supp.2d 987, 996-98 (E.D.Mo.2003).

But the tension between the *Auburn* standard and the full text of § 253(a) has not gone unnoticed. *See City of Portland v. Elec. Lightwave, Inc.*, 452 F.Supp.2d 1049, 1059 (D.Or.2005) ("The Ninth Circuit's interpretation of the scope of section 253(a) appears to depart from the plain meaning of the statute...."); *Qwest Corp. v. City of Portland*, 200 F.Supp.2d 1250, 1255 (D.Or.2002) (construing the *Auburn* standard as dictum because reading § 253(a) as preempting regulations that *may* have the effect of prohibiting telecommunications services "simply misreads the plain wording of the statute"), *rev'd by Portland*, 385 F.3d at 1241 ("Like it or not, both we and the district court are bound by our prior ruling[in *Auburn*]."); *see also Newpath Networks LLC v. City of Irvine*, No. SACV-06-550, 2008 WL 2199689, at *4 (C.D.Cal. Mar. 10, 2008) (noting that "the Court is sympathetic to Irvine's argument that judicial decisions in this area have not been particularly instructive in telling municipalities how they may regulate in accordance with the ... Act"). Recently, the Eighth Circuit rejected the *Auburn* standard and held that, to demonstrate preemption, a plaintiff "must show actual or effective prohibition, rather than the mere possibility of prohibition." *Level 3 Commc'ns, L.L.C. v. City of St. Louis*, 477 F.3d 528, 532-33 (8th Cir. 2007); *see also AT & T Commc'ns of Pac. Nw., Inc. v. City of Eugene*, 177 Or.App. 379, 35 P.3d 1029, 1047-48 (2001) (implicitly rejecting the *Auburn* standard).

578 We find persuasive the Eighth Circuit's and district courts' critique of *Auburn*. *578 Section 253(a) provides that "[n]o State or local statute or regulation ... may prohibit or have the effect of prohibiting ... provi[sion of] ... telecommunications service." In context, it is clear that Congress' use of the word "may" works in tandem with the negative modifier "[n]o" to convey the meaning that "state and local regulations shall not prohibit or have the effect of prohibiting telecommunications service." Our previous interpretation of the word "may" as meaning "might possibly" is incorrect. We therefore overrule *Auburn* and join the Eighth Circuit in holding that "a plaintiff suing a municipality under section 253(a) must show actual or effective prohibition, rather than the mere possibility of prohibition." *Level 3 Commc'ns*, 477 F.3d at 532.

Although our conclusion rests on the unambiguous text of § 253(a), we note that our interpretation is consistent with the FCC's. *See In re Cal. Payphone Ass'n*, 12 F.C.C.R. 14191, 14209 (1997) (holding that, to be preempted by § 253(a), a regulation "would have to actually prohibit or effectively prohibit" the provision of services); *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 980, 125 S.Ct. 2688, 162 L.Ed.2d 820 (2005) (holding that the two-step *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984), analysis applies to FCC rulings). Were the statute ambiguous, we would defer to the FCC under *Chevron*, as its interpretation is certainly reasonable. 467 U.S. at 843, 104 S.Ct. 2778. Our narrow interpretation of the preemptive effect of § 253(a) also is consistent with the presumption that "express preemption statutory provisions should be given a narrow interpretation." *Air Conditioning & Refrigeration Inst. v. Energy Res. Conservation & Dev. Comm'n*, 410 F.3d 492, 496 (9th Cir.2005).

Our present interpretation of § 253(a) is buttressed by our interpretation of the same relevant text in § 332(c)(7)(B)(i)(II)—"prohibit or have the effect of prohibiting." In *MetroPCS*, to construe § 332(c)(7)(B)(i)(II), we focused on the *actual* effects of the city's ordinance, not on what effects the ordinance *might possibly* allow. 400 F.3d at 732-34. Indeed, we rejected the plaintiff's argument that, because the city's zoning ordinance granted discretion to the city to reject an application based on vague standards such as "necessity," the ordinance necessarily constituted an effective prohibition. *Id.* at 724, 732. Consequently, our interpretation of the "effective prohibition" clause of § 332(c)(7)(B)(i)(II) differed markedly from *Auburn's* interpretation of the same relevant text in § 253(a). *Compare MetroPCS*, 400 F.3d at 731-35 (analyzing, under § 332(c)(7)(B)(i)(II), whether the city's ordinance and decision *actually* have the effect of prohibiting the provision of wireless services), *with Portland*, 385 F.3d at 1241 ("[R]egulations that *may* have the effect of prohibiting the provision of telecommunications services are preempted [by § 253(a)]."); *compare also MetroPCS*, 400 F.3d at 732 (rejecting the argument that "the City's zoning `criteria,' which allow for [permit] denials based on findings that a given facility is `not necessary' for the community, are `impossible for any non-incumbent carrier to meet' and thus constitute an effective prohibition of wireless services"), *with Auburn*, 260 F.3d at 1176 (holding that the city's ordinance is an effective prohibition under § 253(a), in large part because the "city reserves discretion to grant, deny, or revoke the [telecommunications] franchises").

579 When Congress uses the same text in the same statute, we presume that it intended the same meaning. *See N. Sports, Inc. v. Knupfer (In re Wind N' *579 Wave)*, 509 F.3d 938, 945 (9th Cir.2007) (applying the presumption); *Boise Cascade Corp. v. EPA*, 942 F.2d 1427, 1432 (9th Cir.1991) ("We must presume that words used more than once in the same statute have the same meaning."); *see also Smith v. City of Jackson*, 544 U.S. 228, 233, 125 S.Ct. 1536, 161 L.Ed.2d 410 (2005) (plurality opinion) ("[W]e begin with the premise that when Congress uses the same language in two statutes having similar purposes, particularly when one is enacted shortly after the other, it is appropriate to presume that Congress intended that text to have the same meaning in both statutes."); *id.* at 261, 125 S.Ct. 1536 (O'Connor, J., concurring in the judgment) (stating that the presumption should apply in the absence of "strong evidence" to the contrary). We see nothing suggesting that Congress intended a different meaning of the text "prohibit or have the effect of prohibiting" in the two statutory provisions, enacted at the same time, in the same statute.

Our holding today therefore harmonizes our interpretations of the identical relevant text in §§ 253(a) and 332(c)(7)(B)(i)(II).[2] Under both, a plaintiff must establish either an outright prohibition or an effective prohibition on the provision of telecommunications services; a

plaintiff's showing that a locality could *potentially* prohibit the provision of telecommunications services is insufficient.

Because Sprint's suit hinges on the statutory text that we interpreted above— "prohibit or have the effect of prohibiting"—we need not decide whether Sprint's suit falls under § 253 or § 332. As we now hold, the legal standard is the same under either.

B. *The Effective Prohibition Standard Applied to the County of San Diego's Ordinance*

Having established the proper legal standard, we turn to Sprint's facial challenge to the Ordinance. "A facial challenge to a legislative Act is, of course, the most difficult challenge to mount successfully, since the challenger must establish that no set of circumstances exists under which the Act would be valid." *United States v. Salerno*, 481 U.S. 739, 745, 107 S.Ct. 2095, 95 L.Ed.2d 697 (1987).[3]

The Ordinance plainly is not an outright ban on wireless facilities. We thus consider whether the Ordinance effectively prohibits the provision of wireless facilities. We have no difficulty concluding that it does not.

The Ordinance imposes a layer of requirements for wireless facilities in addition to the zoning requirements for other structures. On the face of the Ordinance, none of the requirements,
580 individually or in combination, prohibits the construction *580 of sufficient facilities to provide wireless services to the County of San Diego.

Most of Sprint's arguments focus on the discretion reserved to the zoning board. For instance, Sprint complains that the zoning board must consider a number of "malleable and open-ended concepts" such as community character and aesthetics; it may deny or modify applications for "any other relevant impact of the proposed use"; and it may impose almost any condition that it deems appropriate. A certain level of discretion is involved in evaluating any application for a zoning permit. It is certainly true that a zoning board *could* exercise its discretion to effectively prohibit the provision of wireless services, but it is equally true (and more likely) that a zoning board would exercise its discretion only to balance the competing goals of an ordinance—the provision of wireless services and other valid public goals such as safety and aesthetics. In any event, Sprint cannot meet its high burden of proving that "no set of circumstances exists under which the [Ordinance] would be valid," *Salerno*, 481 U.S. at 745, 107 S.Ct. 2095, simply because the zoning board exercises some discretion.

The same reasoning applies to Sprint's complaint that the Ordinance imposes detailed application requirements and requires public hearings. Although a zoning board could conceivably use these procedural requirements to stall applications and thus effectively prohibit the provision of wireless services, the zoning board equally could use these tools to evaluate fully and promptly the merits of an application. Sprint has pointed to no requirement that, on its face, demonstrates that Sprint is effectively prohibited from providing wireless services. For example, the Ordinance does not impose an excessively long waiting period that would amount to an effective prohibition. Moreover, if a telecommunications provider believes that the zoning board is in fact using its procedural rules to delay unreasonably an application, or its discretionary authority to deny an application unjustifiably, the Act provides an expedited judicial review process in federal or state court. *See* 47 U.S.C. § 332(c)(7)(B)(ii) & (v).

We are equally unpersuaded by Sprint's challenges to the substantive requirements of the Ordinance. Sprint has not identified a single requirement that effectively prohibits it from providing wireless services. On the face of the Ordinance, requiring a certain amount of camouflage, modest setbacks, and maintenance of the facility are reasonable and responsible conditions for the construction of wireless facilities, not an effective prohibition.

That is not to say, of course, that a plaintiff could never succeed in a facial challenge. If an ordinance required, for instance, that all facilities be underground and the plaintiff introduced evidence that, to operate, wireless facilities must be above ground, the ordinance would effectively prohibit it from providing services. Or, if an ordinance mandated that no wireless facilities be located within one mile of a road, a plaintiff could show that, because of the number and location of roads, the rule constituted an effective prohibition. We have held previously that rules effecting a "significant gap" in service coverage could amount to an effective prohibition, *MetroPCS*, 400 F.3d at 731-35, and we have no reason to question that holding today.

In conclusion, the Ordinance does not effectively prohibit Sprint from providing wireless services. Therefore, the Act does not preempt the County's wireless telecommunications ordinance.

C. *Section 1983 claim*

581 We adopt the reasoning and conclusion of the three-judge panel that 42 *581 U.S.C. § 1983 claims cannot be brought for violations of 47 U.S.C. § 253. *Sprint Telephony*, 490 F.3d at 716-18; *accord Santa Fe*, 380 F.3d at 1266-67; *see also Kay v. City of Rancho Palos Verdes*, 504 F.3d 803, 812-15 (9th Cir.2007) (holding that § 1983 claims cannot be brought for violations of 47 U.S.C. § 332).

AFFIRMED with respect to the § 1983 claim; otherwise REVERSED. Costs on appeal awarded to Defendants-Appellees/Cross-Appellants.

GOULD, Circuit Judge, concurring:

I concur in full in Judge Graber's majority opinion, holding that Section 253(a) preempts any state or local law that actually or effectively prohibits provision of telecommunication services. I write separately to add my view that normally local governments will have the ability to enforce reasonable zoning ordinances that might affect where and how a cellular tower is located, but that will not effectively prohibit cellular telephone service. Zoning ordinances, in my view, will be preempted only if they would substantially interfere with the ability of the carrier to provide such services. Cases of a preempted zoning ordinance will doubtless be few and far between, and the record in this case shows that telecommunication services here were not effectively barred by the zoning ordinance.

[1] In its complaint, Sprint also alleged that the Ordinance violated another subsection of 47 U.S.C. § 253. The district court dismissed that cause of action for failure to prosecute, and Sprint does not challenge that dismissal on appeal.

[2] We make no comment on what differences, if any, exist between the two statutory sections in other contexts.

[3] The Supreme Court and this court have called into question the continuing validity of the *Salerno* rule in the context of First Amendment challenges. *See, e.g.*, *Wash. State Grange v. Wash. State Republican Party*, ___ U.S. ___, 128 S.Ct. 1184, 1190, 170 L.Ed.2d 151 (2008); *Hotel & Motel Ass'n of Oakland v. City of Oakland*, 344 F.3d 959, 971-72 (9th Cir.2003). In cases involving federal preemption of a local statute, however, the rule applies with full force. *See Hotel & Motel Ass'n*, 344 F.3d at 971 ("To bring a successful facial challenge outside the context of the First Amendment, 'the challenger must establish that no set of circumstances exists under which the [statute] would be valid.'" (alteration in original) (quoting *Salerno*, 481 U.S. at 745, 107 S.Ct. 2095)); *see also Anderson v. Edwards*, 514 U.S. 143, 155 n. 6, 115 S.Ct. 1291, 131 L.Ed.2d 178 (1995) (unanimous opinion) (applying *Salerno* to a federal preemption facial challenge to a state statute).

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Date: May 31, 2007
To: Board of Supervisors, City and County of San Francisco
Regarding: Case No. 2007.0097E
San Francisco Citywide Wireless Broadband Internet Access Network

Analysis of Health and Environmental Effects of Proposed San Francisco Earthlink Wi-Fi Network

With the advent of this proposal, San Francisco is considering converting the city into a wireless zone. Whatever decision is made should be based on the best available scientific evidence. Wi-Fi simply has not been around long enough to know how these particular frequencies and intensities are likely to affect people who are exposed to them on a daily basis for years at a time. San Francisco is on the forefront of a large population study with some unwilling participants.

The following pages present guidelines for radio frequency radiation in various countries; scientific studies that document the adverse effects of living near cell phone antennas (it is the closest we have to Wi-Fi antennas) for both humans and animals; and laboratory studies that demonstrate the harmful effects of radio frequency radiation. The levels showing adverse biological/health effects are compared to FCC guidelines and to calculations of likely exposure in San Francisco attributed to the Earthlink Wi-Fi Network as discussed in "Earthlink-Proposed San Francisco-Wide Wi-Fi Network: Observations and Calculations for Relation to Exposure Limits" prepared by Mitch Maifeld of Zenzic Research.

Many jurisdictions have had to deal with this issue and some of their recommendations regarding placement of radio frequency transmitters are also presented. While these apply to cell phone antennas they are relevant to Wi-Fi antennas. Physicians and scientists from around the world are asking governments to review the existing guidelines and to revisit the use of this technology to ensure its safety. These resolutions are summarized in the text and are presented in full in the Appendix.

Analysis of Health and Environmental Effects of Proposed San Francisco Earthlink Wi-Fi Network

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May 2007

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1. INTRODUCTION

During the *early part* of the 20th century the world underwent a **chemical revolution** and many new chemicals were formulated to promote the growth of plants (nitrogen), to kill pests (DDT), to keep our food cold (CFCs) and to prevent transformers from over heating (PCBs). After decades of use science showed that each of these chemicals had unwanted side effects including polluting water, killing birds, and putting holes in the ozone layer. Now these chemicals are banned or their use is strictly regulated.

During the *second half* of the 20th century the world underwent an **electromagnetic revolution** and many new frequencies were used for radio and TV broadcasting, radar, mobile phones[1] and for a variety of wireless devices. After decades of use science reported that this form of energy has unwanted side effects. Some of that evidence is provided in the pages that follow.

2. RADIO FREQUENCY GUIDELINES

Municipal councilors, who approve requests for the placement of antennas[2] within their jurisdiction, are told by both the telecommunication industry and by the federal government that this technology is safe as long as the radio frequency exposure remains below the federal guideline. The industry calculates the exposure in a particular area for approval and, once the antennas are erected, unannounced monitoring is seldom conducted to determine whether those values are correct.

The Federal Communications Commission (FCC) (22) Guideline is similar to the international guideline ICNIRP guideline (15) and is based on **short-term thermal effects**. This guideline is based on the assumption that if microwave[3] energy does not heat tissue it is not harmful. **This assumption is incorrect**. Adverse biological effects have been documented at levels below federal guidelines and there are no federal guidelines for **non-thermal effects,** nor are there guidelines for **long-term exposure**. The technological developments and uses of wireless devices are running well ahead of the policy decisions necessary to ensure their safety.

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[1] The term *mobile phone* refers to both cell phones and cordless phones.

[2] antennas are also known as base stations and are called masts in Europe; they may be placed on tall structures or specially constructed towers.

[3] Note that microwave energy is within the radio frequency band of the electromagnetic spectrum and ranges from 300 MHz to 300 GHz. In this report radio frequency radiation (RFR) will be used when referring to energy associated with Wi-Fi and cell phone frequencies.

According to Norbert Hankin, Chief EMF Scientist, U.S. Environmental Protection Agency:

> *"The U.S. Federal Communications Commission, (FCC's) exposure guidelines are considered protective of effects arising from a thermal mechanism but* ***not*** *from all possible mechanisms. Therefore, the generalisation by many that the guidelines protect human beings from harm by any or all mechanisms is* ***not justified.*** *"* (http://www.protectschools.org/epa%20letter.pdf)

Organizations that set safety standards such as ANSI/IEEE or ICNIRP are quick to point out that "safe" radio frequency exposure rests on the fact that exposure is too weak to produce a rise in body temperature, or a "thermal" effect. Whether non-thermal effects occur is no longer the issue, the issue is at what level do these non-thermal effects occur and what are the safe levels of long-term exposure.

Guidelines for exposure to environmental contaminants are similar in countries around the world. If these guidelines differ the difference is often within narrow limits or relates to specific conditions unique to a particular environment or a particular population. This is not the case for radio frequency radiation.

Radio frequency guidelines vary by orders of magnitude in countries around the world (Figure 1). The FCC guideline ranges from 200 to 1000 microW/cm^2 based on frequency and is much higher than the guidelines recommended in New Zealand, Italy, China, Bulgaria, Hungary, Russia, Switzerland, Austria and in New South Wales, Australia. Since the science upon which these guidelines are based remains the same, one way of interpreting this discrepancy is that some countries place a greater value on science and on preventative health regulations while others may place a greater value on commerce.

A number of adverse health effects have been documented at levels below the FCC guidelines, which include altered white blood cells in school children; childhood leukemia; impaired motor function, reaction time, and memory; headaches, dizziness, fatigue, weakness, and insomnia. At the frequency in question for Wi-Fi technology the guideline in the US is 1000 microW/cm^2 (or 1 milliW/cm^2).

The current federal guideline is based on a short-term heating effect set at 6-minutes for those occupationally exposed and 30 minutes for public exposure. An FCC guideline based on a 30-minute exposure is unrealistic for exposure that is likely to be 24/7 for decades. However, if this guideline is extrapolated for long-term exposure, the exposure limit decreases and approaches guidelines established by other countries (Table 1).

According to Table 1, if the goal is to protect people who use a wireless computer daily for one year, their exposure should not exceed **0.33 microW/cm^2** (a value similar to the Salzburg guideline) and to protect them for 10 years their exposure should not exceed **0.03 microW/cm^2**.

The FCC will tell you their guideline is not intended for long-term extrapolation in this manner. However, since the FCC doesn't have a long-term guideline and since the extrapolated values fit the scientific data for long-term health effects the 0.33 microW/cm^2 and 0.03 microW/cm^2 guidelines are more appropriate to determine 'relatively safe' exposure limits for the San Francisco population until more realistic and reliable guidelines are established that include non-thermal effects.

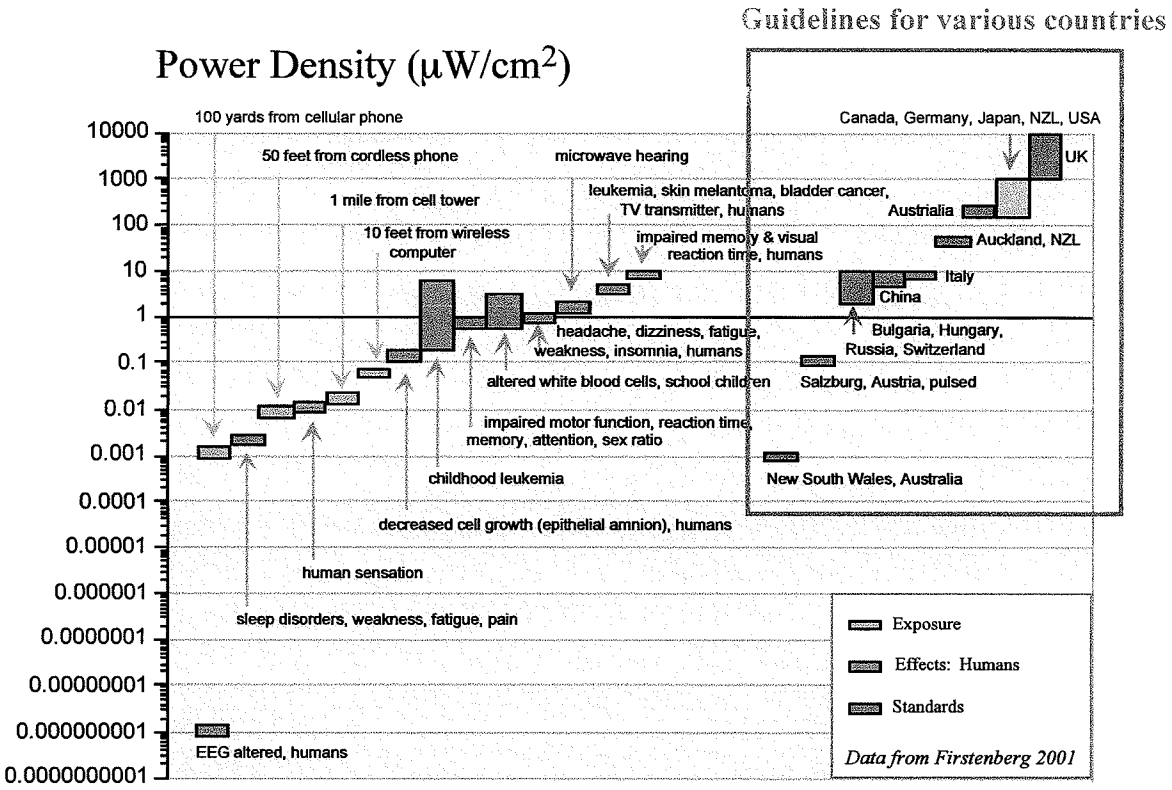

Figure 1. Guidelines, exposures and effects of radio frequency radiation at various power densities. Data from Firstenberg (6).

3. CELL PHONE ANTENNAS: HUMAN EXPOSURE

There have been no studies to date on the effects of exposure to Wi-Fi. This in itself is unusual since populations are already being exposed to this energy without any studies on how they might be affected. Since there is not yet enough information about exposure to Wi-Fi there is a need to rely on studies of exposure to similar types of radio frequency radiation. The closest case studies are those of exposure to cell phone antennas and cell phones.

As of 2007 there have been seven epidemiological studies of people living near cell phone antennas in Spain, the Netherlands, Israel, Germany, Egypt and Austria and each one of these studies documents adverse health effects. Studies in Israel and Germany show increased risk of cancer and the others show increased symptoms of electrohypersensitivity (EHS). In all of the studies, exposures are orders of magnitude below the FCC guideline. Three of those studies are summarized below. Note the critical distances and, where available, exposures to RFR.

Table 1. FCC Guideline for public exposure to radio frequency radiation extrapolated for longer exposure and compared to the Russian and Salzburg guidelines.

Exposure Time	Time (hr)	Guideline (microW/cm^2)	Comments
30 minutes	**0.5**	**1000**	**FCC guideline, public exposure**
60 minutes [casual computer use]	1	**500** =1000/2	extrapolation of FCC guideline for 1 hour exposure daily
daily computer use [6 hours/day]	6	**83** = 500/6	extrapolated FCC *daily* exposure limit
weekly computer use [6 hr/d x 5 d/week]	30 = 6 hr/d * 5d/wk	**16.7** = 500/30	extrapolated FCC *weekly* exposure limit
		10	**Russian guideline**
monthly computer use [as above for 4 weeks]	120 = 30 hr /wk x 4 wk	**4.17** = 500/120	extrapolated FCC *monthly* exposure limit
annual computer use [as above for 50 weeks]	1500 = 30 hr/wk x 50 wk	**0.33** = 500/1500	extrapolated FCC *annual* exposure limit
		0.1	**Salzburg guideline**
10-year computer use [as above for 10 years]	15000 =1500 hr/y x 10 yr	**0.03** = 500/15000	extrapolated FCC *10-year* exposure limit

Example 1: GERMANY (4)

The aim of this study was to examine whether people living close to cellular transmitter antennas were exposed to a greater risk of becoming ill with malignant tumors. The researchers found that the proportion of newly developing cancer cases was significantly higher among those patients who had lived within **400 meters (m)**[4] from the cellular transmitter site during the past 10 years, compared to those patients living further away. They also found that the patients fell ill on average 8 years earlier. After five years' operation of the transmitting installation, the relative risk of getting cancer had increased by 3-fold for the residents of the area near the installation, compared to the inhabitants of Naila outside the area.

Example 2: SPAIN (27)

In this study the people who lived closest to the cellular antennas had the highest incidences of the following disorders: fatigue, sleep disturbances, headaches, feeling of discomfort, difficulty concentrating, depression, memory loss, visual disruptions, irritability, hearing disruptions, skin problems, cardiovascular disorders, and dizziness (See Figure 2).

Adverse health effects were reported at distances up to **300 m**. In this case, health is defined according to the World Health Organization definition as "*the state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity*". Note that these symptoms are commonly referred to as electrohypersensitivity (EHS).

Example 3: SPAIN revisited (25)

[4] 1 meter is similar to 1 yard.

The study in Spain was repeated and this time exposure to radio frequency radiation was recorded. The scientists reported the following symptoms all statistically significant within **50 to 150 m** of the cell phone antenna at an average power density **of 0.11 ± 0.19 microW/cm^2**: headaches, sleep disturbances, irritability, difficulty concentrating, discomfort, depression, dizziness, appetite loss, and nausea.

Note that **0.11 microW/cm^2** is considerably lower than **1000 microW/cm^2** established by the FCC. This demonstrates that the FCC guideline does not protect the public from radio frequency radiation exposure.

Maifeld (22) calculated different scenarios for exposure of people in San Francisco if the Earthlink Wi-Fi Network becomes operational. All exposures are at levels below FCC guidelines. The San Francisco resident reading SFGate.com on her laptop computer while sitting on her balcony will be used for comparison. Maifeld (22) calculated that she might be exposed to **36 microW/cm^2** from a combination of her laptop computer (**35 microW/cm^2**) and (**1 microW/cm^2**) the nearest antenna that might be 5 m (16 ft) away. Since every third node has a gateway co-located, in a worse-case scenario she would be exposed to **41 microW/cm^2** with the additional **6 microW/cm^2** coming from the network node location. This value is 400 times higher than the exposure in the Oberfeld study (25). The power density exposure from the antenna alone (**1 microW/cm^2**) is above levels where people experienced headaches, sleep disturbances, dizziness, etc at **0.11 microW/cm^2**.

4. ELECTROHYPERSENSTIVITY (EHS)

Electrohypersensitivity (EHS) is now recognized by the World Health Organization (WHO) and is defined as:

> *". . . a phenomenon where individuals experience adverse health effects while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields (EMFs). . . Whatever its cause, EHS is a real and sometimes a debilitating problem for the affected persons, while the level of EMF in their neighborhood is no greater than is encountered in normal living environments. Their exposures are generally several orders of magnitude under the limits in internationally accepted standards.* " (23)

EHS is classified as a disability in Sweden and health care facilities with low exposure to electromagnetic fields and radio frequency radiation are available for sensitive individuals. Approximately 2% of the population has severe symptoms of EHS (see Appendix 1 for their stories). These people are unable to live in our modern society with its electrical and electronic appliances and with the increasing exposure to radio frequency radiation. Another 35% of the population has moderate symptoms represented by an impaired immune system and by chronic illness.

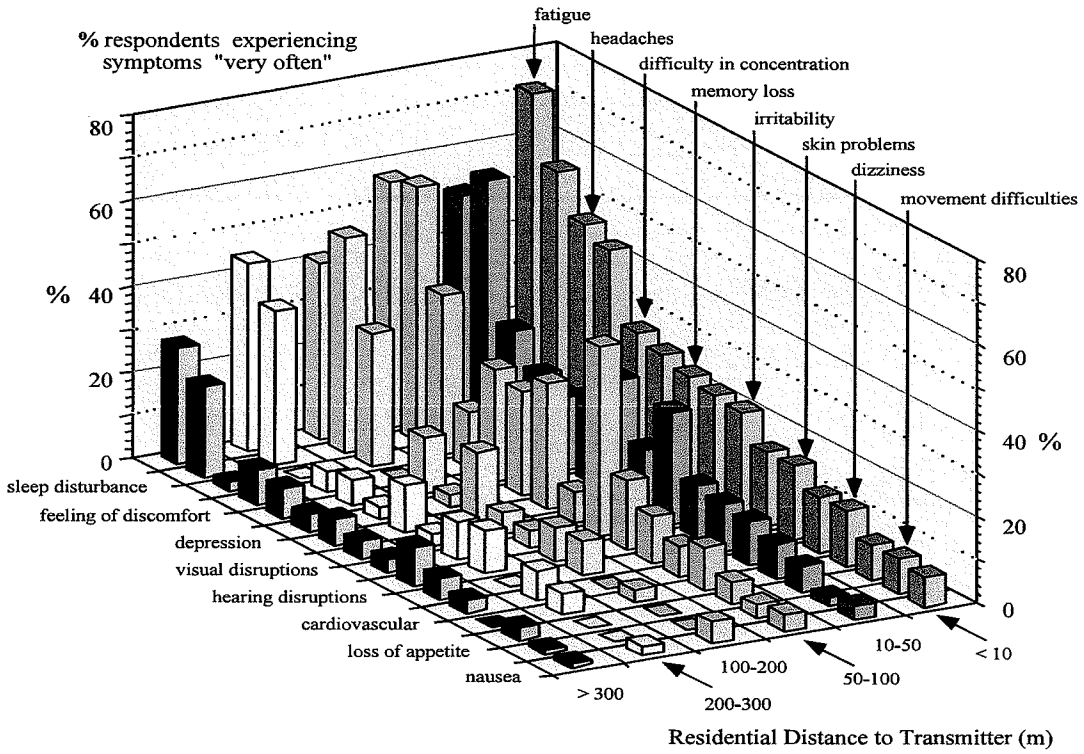

Figure 2. Response of residents living in the vicinity of a cellular phone base station in Spain (27).

Symptoms of EHS include: cognitive dysfunction (memory, concentration, problem-solving); balance, dizziness & vertigo; facial flushing, skin rash; chest pressure, rapid heart rate; depression, anxiety, irritability, frustration, temper; fatigue, poor sleep; body aches, headaches; ringing in the ear (tinnitus) and are consistent with chronic fatigue and fibromyalgia.

The Irish Doctors' Environmental Association (IDEA) in their position paper (16) on electromagnetic radiation recognizes that an increasing number of people are complaining with symptoms of EHS in Ireland. They request the Irish government to review research and management/treatments internationally; to establish a database for EHS; and to establish the strictest safety regulations for masts and transmitters (Appendix 8).

Environmental sensitivity attributed to electromagnetic exposure has recently been identified in a Canadian Human Rights Commission report (28). In this document both radio wave sickness (associated with radar workers) and electromagnetic hypersensitivities (associated with ground current, low frequency electromagnetic fields, telecommunications, and radio frequencies on power lines) are identified as environmental sensitivities.

San Francisco with a population of 744,000 people may have as many as 15,000 people (2% of population) who are severely affected by radio frequency radiation and up to 260,000 individuals (35% of population) who have moderate sensitivities. Those individuals in San Francisco living in apartments at or near the level of node-only and gateway WiFi locations (22) who suffer from EHS may be further adversely affected by the Earthlink Wi-Fi proposal.

5. CELL PHONE ANTENNAS: ANIMAL EXPOSURE

Animals are also affected by exposure to radio frequency radiation near cell phone antennas. Three examples are provided below. Note the levels and distances at which these associations occur.

Example 4: MICE (21)

Six pairs of mice were placed near an antenna park in Greece and 6 pairs were used as unexposed controls. They were mated 5 times. The exposed mice had progressively fewer newborns per dam and within 5 matings became irreversibly infertile. Exposure to radio frequency radiation at the antenna park was calculated to be between **1.05 to 0.17 microW/cm^2**. Compare this to the Maifeld (22) calculations of **1 microW/cm^2** within 16 feet of a Wi-Fi node or **6 microW/cm^2** near a 20 W node/gateway combination or **1.4 microW/cm^2** for the city employee working at his desk with a wireless router.

Example 5: COWS (20)

A study funded by the Bavarian State Government in Germany followed reports of adverse health effects in dairy cattle after a Telecoms mast had been erected for TV and cell phone transmission. Scientists documented a significant drop in milk yield and behavioral disorders in some of the cows that related to the microwave transmissions from the mast. When the cattle were moved to a farm 20 km away, their milk yield and behavior returned to normal within days. When the cattle were returned to the mast environment their symptoms returned as well. Fodder analysis and the amount of feed could not account for the changes among the cattle. Analysis of aborted fetal material did not find any pathogens causing the abortion based on microscope and cultural examination and on serological tests. Autopsy of dead cows reported acute heart and circulatory collapse with internal bleeding from several organs. Exposure to RFR at the stable entrance was **80 microW/cm^2** and the highest reading reported on the farm near the stable was **350 microW/cm^2**. These values are much lower than the FCC guideline of **1000 microW/cm^2**.

Example 6: BIRDS (1)

Recent evidence suggests that wildlife near mobile phone antennas may also be affected by radio frequency radiation. White storks nesting within **200 m** of a cell phone antenna were compared to those nesting more than **300 m** away. Nesting, breeding, and hatching success were significantly reduced for those birds near the cell phone antenna. The number of young per pair for nests near the antenna was significantly lower than for those farther away (0.86 vs. 1.6, ~50% decrease, P=0.001). Nests with no chicks increased from 3.3% (reference population) to 40% within **200 m** of the antennas. Near the antennas, the nesting pairs were more aggressive with each other, were less successful at building nests, and had more chick deaths in the early stages. Level of radio frequency exposure was not provided.

These studies show that animals and birds, living within 200 m of a cell phone antenna are adversely affected. Note that all three species (mice, cows, birds) had reproductive problems. Radio frequency exposure has also been suggested for the decline of the European house sparrow

(5) and the potential bee colony collapses (8) in recent years. The addition of 2,200 antennas on light and utility poles may adversely affect bird populations in San Francisco as well.

6. MOBILE PHONES AND WIRELESS COMPUTERS

Antennas communicate with mobile phones and Wi-Fi antennas communicate with wireless computers. Exposure to radio frequency of the brain near mobile phones and of the body near wireless computers is a concern. Several studies have documented an increased risk of brain tumors, as well as tumors of nerve cells associated with hearing and seeing among cell phone users. These studies generally show a statistically significant increase in tumors on the same side of the head (ipsilateral) that one exposes to the cell phone for at least a 10-year period.

Example 7: META-STUDY OF MOBILE PHONES AND CANCER (18)

Kundi et al. (18) reviewed 9 studies that examined cancers among cell phone users including 4 from the US, 2 from Sweden, and 1 from each of Denmark, Finland, and Germany. All studies have methodological deficiencies: too short duration of mobile phone use, exposure not rigorously determined, and possibility of recall error. The authors conclude that all studies with reasonable latencies found an increased cancer risk associated with mobile phone use. Estimates of relative risk ranged from 1.3 to 4.6. What this means is a 30% to 360% increased risk of cancers. Highest overall risks were for acoustic neuroma[5] (3.5 or 250%) and uveal melanoma[6] (4.2 or 320%). There was an enhanced risk for increased latency period, i.e. the longer you used your phone the greater the risk of developing a tumor.

Example 8: Industry-funded Mobile Phone Study (19)

The most recent study of cancer risk and mobile phone use (19) was partially funded by Manufacturers' Forum and the GSM Association. What this study reported was a 40% statistically significant increased risk of ipsilateral (same side of the head) glioma[7] within 10 years of cell phone use.

Exposure to video display terminals (VDT) in wired computers has been associated with miscarriages (9) and with symptoms of electrodermal skin problems (17). Comprehensive studies of the effects of exposure to wireless computers have not yet been conducted. Since a wireless laptop computer can exposure a user to **35 microW/cm^2** (22) these studies are very much needed. They should be conducted before cities become Wi-Fi meccas and before they are used in classrooms.

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[5] associated with hearing

[6] associated with vision

[7] A glioma is a primary tumor that affects the glial (non-neuronal) cells in the brain.

7. LABORATORY AND EPIDEMIOLOGICAL STUDIES

Dr. Henry Lai (University of Washington) compiled a list of studies that document biological effects of radio frequency radiation at low intensities (Table 2).

Table 2. Studies reporting biological effects of radiofrequency radiation (RFR) at low intensities *(see Appendix 2 for more information).*

(1) Balode (1996)- blood cells from cows from a farm close and in front of radar showed significantly higher level of severe genetic damage.

(2) Boscol et al. (2001)- RFR from radio transmission stations (5 microW/cm^2) affects immunological system in women. *[Note this is below the calculated* ***6 microW/cm^2*** *within 16 feet of a node/gateway combination in San Francisco (22).]*

(3) Chiang et al. (1989)- people lived and worked near radio antennae and radar installations showed deficits in psychological and short-term memory tests.

(4) de Pomerai et al. (2000, 2002) reported an increase in a molecular stress response in cells after exposure to a RFR at a SAR[8] of **0.001 W/kg**. This stress response is a basic biological process that is present in almost all animals - including humans. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(5) de Pomerai et al. (2003) RFR damages proteins at **0.015-0.020 W/kg**. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(6) D'Inzeo et al. (1988)- very low intensity RFR (2–4 microW/cm^2) affects the operation of acetylcholine-related ion-channels in cells. These channels play important roles in physiological and behavioral functions. *[Note this is below the calculated* ***6 microW/cm^2*** *within 16 feet of a node/gateway combination in San Francisco (22).]*

(7) Dolk et al. (1997)- a significant increase in adult leukemias was found in residence who lived near the Sutton Coldfield television (TV) and frequency modulation (FM) radio transmitter in England.

(8) Dutta et al. (1989) reported an increase in calcium efflux in cells after exposure to RFR at **0.005 W/kg**. Calcium is an important component of normal cellular functions. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(9) Fesenko et al. (1999) reported a change in immunological functions in mice after exposure to RFR at a power density of 1 microW/cm^2. *[Note this is below the calculated* ***6 microW/cm^2*** *within 16 feet of a node/gateway combination in San Francisco (22).]*

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[8] SAR (specific absorption rate): USA guideline for non-occupational, whole body exposure is 0.08 W/kg (watts/kilogram).

(10) Hjollund et al. (1997)- sperm counts of Danish military personnel, who operated mobile ground-to-air missile units that use several RFR emitting radar systems (maximal mean exposure 10 microW/cm^2), were significantly low compared to references. *[Note this is below scenario of **41 microW/cm^2** for San Francisco (22)]*

(11) Hocking et al. (1996)- an association was found between increased childhood leukemia incidence and mortality and proximity to TV towers.

(12) Ivaschuk et al. (1999)- short-term exposure to cellular phone RFR of very low SAR (**0.026** W/kg) affected a gene related to cancer. *[Compare to **0.08 W/kg** FCC Guideline.]*

(13) Kolodynski and Kolodynska (1996)- school Children lived in front of a radio station had less developed memory and attention, their reaction time was slower, and their neuromuscular apparatus endurance was decreased.

(14) Kwee et al. (2001)- 20 minutes of cell phone RFR exposure at **0.0021** W/kg increased stress protein in human cells. *[Compare to **0.08 W/kg** FCC Guideline.]*

(15) Lebedeva et al. (2000)- brain wave activation was observed in human subjects exposed to cellular phone RFR at 60 microW/cm^2. *[Note this is <u>above</u> the scenario of **41 microW/cm^2** for San Francisco (22) but <u>below</u> the FCC guidelines of **1000 microW/cm^2**.]*

(16) Magras and Xenos (1999) reported a decrease in reproductive function in mice exposed to RFR at power densities of 0.168 - 1.053 microW/cm^2. *[Note this is below the calculated **6 microW/cm^2** within 16 feet of a node/gateway combination in San Francisco and is at or below the exposure of 1 **microW/cm^2** within 16 feet of a Wi-Fi node (22).]*

(17) Mann et al. (1998)- a transient increase in blood cortisol was observed in human subjects exposed to cellular phone RFR at 20 microW/cm^2. Cortisol is a hormone involved in stress reaction. *[Note this is below scenario of **41 microW/cm^2** for San Francisco (22)]*

(18) Marinelli et al. (2004)- exposure to 900-MHz RFR at **0.0035** W/kg affected cell's self-defense responses. *[Compare to **0.08 W/kg** FCC Guideline.]*

(19) Michelozzi et al. (1998)- leukemia mortality within **3.5 km** (5,863 inhabitants) near a high power radio-transmitter in a peripheral area of Rome was higher than expected.

(20) Michelozzi et al. (2002)- childhood leukemia higher at a distance up to **6 km** from a radio station.

(21) Navakatikian and Tomashevskaya (1994)- RFR at low intensities (10-100 microW/cm^2; **0.0027- 0.027** W/kg) induced behavioral and endocrine changes in rats. Decreases in blood concentrations of testosterone and insulin were reported. *[Note this is within the range of scenario of **41 microW/cm^2** for San Francisco (22) and below **0.08 W/kg** FCC Guideline.]*

(22) Novoselova et al. (1999)-low intensity RFR (1 microW/cm^2) affects functions of the immune system. *[Note this is below the calculated **6 microW/cm^2** within 16 feet of a*

node/gateway combination in San Francisco and is at or below the exposure of 1 ***microW/cm²*** *within 16 feet of a Wi-Fi node (22).]*

(23) Novoselova et al. (2004)- chronic exposure to RFR (1 microW/cm²) decreased tumor growth rate and enhanced survival in mice. *[Note this is below the calculated* ***6 microW/cm²*** *within 16 feet of a node/gateway combination in San Francisco and is at or below the exposure of 1* ***microW/cm²*** *within 16 feet of a Wi-Fi node (22).]*

(24) Park et al. (2004) higher mortality rates for all cancers and leukemia in some age groups in the area near the AM radio broadcasting towers.

(25) Persson et al. (1997) reported an increase in the permeability of the blood-brain barrier in mice exposed to RFR at **0.0004 - 0.008** W/kg. The blood-brain barrier envelops the brain and protects it from toxic substances. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(26) Phillips et al. (1998) reported DNA damage in cells exposed to RFR at SAR of **0.0024 - 0.024** W/kg. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(27) Polonga-Moraru et al. (2002) change in membrane of cells in the retina (eye) after exposure to RFR at 15 microW/cm². *[Note this is below scenario of* ***41 microW/cm²*** *for San Francisco (22)]*

(28) Pyrpasopoulou et al. (2004) exposure to cell phone radiation during early gestation at SAR of **0.0005** W/kg (5 microW/cm²) affected kidney development in rats. *[Note this is below the calculated* ***6 microW/cm²*** *within 16 feet of a node/gateway combination in San Francisco (22).]*

(29) Salford et al. (2003)- nerve cell damage in brain of rats exposed for 2 hrs to GSM signal at **0.02** W/kg. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(30) Santini et al. (2002)- increase in complaint frequencies for tiredness, headache, sleep disturbance, discomfort, irritability, depression, loss of memory, dizziness, libido decrease, in people who lived within **300 m** of mobile phone base stations.

(31) Sarimov et al. (2004)- GSM microwaves affect human lymphocyte chromatin similar to stress response at **0.0054** W/kg. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(32) Schwartz et al. (1990)- calcium movement in the heart affected by RFR at SAR of **0.00015** W/kg. Calcium is important in muscle contraction. Changes in calcium can affect heart functions. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(33) Somosy et al. (1991)- RFR at **0.024** W/kg caused molecular and structural changes in cells of mouse embryos. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(34) Stagg et al. (1997)- glioma cells exposed to cellular phone RFR at **0.0059** W/kg showed significant increases in thymidine incorporation, which may be an indication of an increase in cell division. *[Compare to* ***0.08 W/kg*** *FCC Guideline.]*

(35) Stark et al. (1997)- a two- to seven-fold increase of salivary melatonin concentration was observed in dairy cattle exposed to RFR from a radio transmitter antenna.

(36) Tattersall et al. (2001)- low-intensity RFR (**0.0016 - 0.0044 W/kg**) can modulate the function of a part of the brain called the hippocampus, in the absence of gross thermal effects. The changes in excitability may be consistent with reported behavioral effects of RFR, since the hippocampus is involved in learning and memory. *[Compare to **0.08 W/kg** FCC Guideline.]*

(37) Vangelova et al. (2002)- operators of satellite station exposed to low dose (0.1127 J/kg) of RFR over a 24-hr shift showed an increased excretion of stress hormones.

(38) Velizarov et al. (1999) showed a decrease in cell proliferation (division) after exposure to RFR of **0.000021 - 0.0021** W/kg. *[Compare to **0.08 W/kg** FCC Guideline.]*

(39) Veyret et al. (1991)- low intensity RFR at SAR of **0.015 W/kg** affects functions of the immune system. *[Compare to **0.08 W/kg** FCC Guideline.]*

(40) Wolke et al. (1996)- RFR at **0.001W/kg** affects calcium concentration in heart muscle cells of guinea pigs. *[Compare to **0.08 W/kg** FCC Guideline.]*

All of the 40 reports, reviewed in the table above by Dr. Henry Lai, document biological effects or associations, many of them adverse or undesirable, at exposure to radio frequency radiation below the FCC guidelines for both power density (**1000 microW/cm^2**) and specific absorption rate (**0.08 W/kg**). Of the 12 studies that provide power density data, 11 document effects below **41 microW/cm^2** (scenario of woman using her laptop computer on her balcony); 6 document effects below **6 microW/cm^2** (exposure to multiple Wi-Fi antennas); and 3 document effects below **1 microW/cm^2** (exposure to 1 Wi-Fi antenna) (22). People in San Francisco living in apartments at or near the level of node-only and gateway Wi-Fi locations, who suffer from EHS, may be adversely affected by the radiation from the antennas in the Earthlink Wi-Fi proposal even if they are not using this technology. Users of this technology will have even higher exposure levels.

Firstenberg (6) also compiled a list of studies showing biological effects at levels below federal guidelines for radio frequency radiation (Table 3).

Table 3. Reported biological effects associated with radio frequency radiation. [Data from Firstenberg (6). Shaded sections were not part of the original report.]

Power Density (μW/cm2)	Reported Biological Effects	References
0.0000000000001	Altered genetic structure in E. Coli	Belyaev 1996
0,0000000001	Threshold of human sensitivity	Kositsky 2001
0.000000001	Altered EEG in human subjects	Bise 1978
0.0000000027	Growth stimulation in *Vicius fabus*	Brauer 1950
0.00000001	Effects on immune system in mice	Bundyuk 1994
0.00000002	Stimulation of ovulation in chickens	Kondra 1970
0.000005	Effect on cell growth in yeast	Grundler 1992
0.00001	**1/100 millionth of FCC guidelines**	
0.00001	Conditioned "avoidance" reflex in rats	Kositsky 2001
0.000027	Premature aging of pine needles	Selga 1996
0.002	Sleep disorders, abnormal blood pressure, nervousness, weakness, fatigue, limb pain, joint pain, digestive problems, fewer schoolchildren promoted	Altpeter 1995, 1997
0.0027	Growth inhibition in *Vicius fabus*	Brauer 1950
0.0027 to 0.065	Smaller tree growth rings	Balodis 1996
0.01	**1/1000th of FCC guidelines**	
0.01	Human sensation	Kolbun 1987
0.06	Altered EEG, disturbed carbohydrate metabolism, enlarged adrenals, altered adrenal hormone levels, structural changes in liver, spleen, testes, and brain—in white rats and rabbits	Dumanskij 1974
0.06	Slowing of the heart, change in EEG in rabbits	Serkyuk, Reported in McRee 1980
0.1	Increase in melatonin in cows	Stark 1997
0.1 to 1.8	Decreased life span, impaired reproduction, structural and developmental abnormalities in duckweed plants	Magone 1996
0.13	Decreased cell growth (human epithelial amnion cells)	Kwee 1997
0.168	Irreversible sterility in mice	Magras 1997
0.2 to 8.0	Childhood leukemia near transmitters	Hocking 1996
0.3	Impaired motor function, reaction time, memory and attention of schoolchildren, and altered sex ratio of children (fewer boys)	Kolodynski 1996
0.6	Change in calcium ion efflux from brain tissue	Dutta 1986
0.6	Cardiac arrhythmias and sometimes cardiac arrest (frogs)	Frey 1968
4	Altered white blood cell activity in schoolchildren	Chiang 1989
1	Headache, dizziness, irritability, fatigue, weakness, insomnia, chest pain, difficulty breathing, indigestion (humans—occupational exposure)	Simonenko 1998
1	Stimulation of white cells in guinea pigs	Shandala 1978
1	**Within 16 feet (5 meters) of a Wi-Fi node in San Francisco**	**Maifeld 2007**
2	"Microwave hearing"—clicking, buzzing, chirping, hissing, or high-pitched tones	Frey 1963, 1969, 1971, 1973, 1988, Justeson 1979, Olsen 1980, Wieske 1963, Lin 1978
2.5	Breakdown of blood-brain barrier (used a digital cellular phone to provide the radiation)	Salford 1997
5	Leukemia, skin melanoma and bladder cancer near TV and FM transmitter	Dolk 1997
5	Biochemical and histological changes in liver, heart, kidney, and brain tissue	Belokrinitskiy 1982
10	**1% of FCC guideline**	
10	Damaged mitochondria, nucleus of cells in hippocampus of brain	Belokrinitskiy 1982a
10	Impaired memory and visual reaction time in people living near transmitters	Chiang 1989
10	Decreased size of litter, increased number of stillborns in mice	Il'Chevich (reported in McRee 1980)
10	Redistribution of metals in the lungs, brain, heart, liver, kidney, muscles, spleen, bones, skin, blood	Shutenko 1981
1000	**FCC Guideline, 6-minute occupational exposure and 30 minute public exposure based on heating**	

8. SITING OF CELL PHONE ANTENNAS

Communities worldwide are struggling with siting of cell phone base stations. Where should these antennas be placed for optimum reception and minimal health effects? Many of these communities have yet to be confronted with Wi-Fi antennas.

Example 9: INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS (IAFF)

The International Association of Fire Fighters (IAFF) ratified Resolution 15 in Boston, August 2004. Resolution 15 states that:

> *The IAFF oppose the use of fire stations as base stations for antennas and towers for the conduction of cell phone transmissions until such installations are proven not to be hazardous to the health of our members.*" (14).

This resolution was prompted by a study of abnormal brain activity and ill health among of fire fighters in California who worked for less than 5 years at a fire hall with cell phone antennas on the roof. Extensive medical testing showed that the fire fighters experienced confusion, loss of short-term memory, inability to focus, migraine headaches, insomnia, "brain fog," infertility, slowed reaction time, depression, tremors, and vertigo. The SPECT scan of their brain shows abnormal changes that could not be explained by exposure to chemicals.

Example 10: SCHOOLS

The Vancouver, British Columbia School Board passed a resolution in January 2005 as follows:

Be it resolved that:

- *no further installations of cellular antenna be permitted on any school building or school grounds regularly used by students, and*
- *Incompatible Land Uses Near Schools be amended to included any installation of cellular antenna within 305 m (1000 ft) of a school as an incompatible use and that VSB be so notified of any potential installation.*

The county of Palm Beach, Florida, the City of Los Angeles, California, and the country of New Zealand have all prohibited cell phone base stations and antennas near schools due to safety concerns (14).

The decision not to place cell antennas near schools is based on the likelihood that children are more susceptible to this form of radiation. Light and utility poles in San Francisco are found near schools and therefore the Earthlink Wi-Fi Network would result in increased exposures for children that are inconsistent with these policies.

Example 11: UNITED KINGDOM

Belfast City Council ratified decisions of its Development Committee (Aug 18, 1999) that no transmitter masts should be permitted on any Council Property, due to unknown risk and substantial public concern.

Wyre Borough Council, Lancashire believed it was unsuitable to site telecommunication towers 190 m from primary school and 40 m from houses.

Scotland Planning Authorities adopted "Precautionary Policy" due to "perceived inadequate official advice from Government Departments"

In England & Wales, the Local Government Association (LGA) advised member authorities to adopt "Precautionary Approach". This decision making process was based on the concept that waiting for "conclusive scientific evidence" before acting is potentially flawed.

Recent reports from the UK indicate cancer clusters near mobile phone masts and these masts are now being removed. One such example is provided in Appendix 3.

Sir William Stewart, the chairman of the Health Protection Agency (HPA) in the UK is asking that Wi-Fi exposure be reviewed. In his comments about the 2000 Stewart Report (29) he stated that:

> *"There may be changes, for example in cognitive function . . . there were some indications that there may be cancer inductions . . . there were some molecular biology changes within the cell and these were issues that we had to bear in mind."*

http://www.telegraph.co.uk/news/main.jhtml;jsessionid=PDE5M33FHNW0HQFIQMFSFFWAVCBQ0IV0?xml=/news/2007/05/21/nwifi21.xml

9. RESOLUTIONS & APPEALS

Physicians (7, 13, 16) and scientists (2, 3, 26) have issued statements that biological effects from low-intensity RF radiation are scientifically established and are asking governing bodies in Europe and North America to re-examine our use of wireless technology and reduce existing radio frequency guidelines. These Appeals and Resolutions are presented in Appendices 4 to 9. Several are summarized below.

More than 3000 physicians have signed the **Freiburger Appeal (7).** These doctors have observed among their patients an increased incidence of disorders including headaches, chronic exhaustion, agitation, sleeplessness, tinnitus, susceptibility to infection, nervous and connective tissue pains that they associate with increased exposure to high frequency microwave radiation from mobile phone base stations and mobile phones (both cell phones and cordless phones).

Below are direct quotes from this document:

> *Our therapeutic efforts to restore health are becoming increasingly less effective: the unimpeded and continuous penetration of radiation into living and working areas,*

particularly bedrooms, an essential place for relaxation, regeneration and healing, causes uninterrupted stress and prevents the patient's thorough recovery.

In the face of this disquieting development, we feel obliged to inform the public of our observations . . .

What we experience in the daily reality of our medical practice is anything but hypothetical! We see the rising number of chronically sick patients also as the result of an irresponsible "safety limits policy", which fails to take the protection of the public from the short- and long-term effects of mobile telephone radiation as its criterium for action. Instead, it submits to the dictates of a technology already long recognized as dangerous. For us, this is the beginning of a very serious development through which the health of many people is being threatened.

We will no longer be made to wait upon further unreal research results - which in our experience are often influenced by the communications industry, while evidential studies go on being ignored. We find it to be of urgent necessity that we act now!

Above all, we are, as doctors, the advocates for our patients. In the interest of all those concerned, whose basic right to life and freedom from bodily harm is currently being put at stake, we appeal to those in the spheres of politics and public health.

The Helsinki Appeal (13) was a call for the European Parliament to adopt new safety standards, reject ICNIRP standards (15), and apply the Precautionary Principle to EMFs. The Helsinki Appeal can be found in Appendix 7.

The Benevento Resolution (2) requested among other things that wireless-free zones be established in cities, in public buildings (schools, hospitals, residential areas) and on public transit, to permit access by persons who are hypersensitive to electromagnetic energy (Appendix 9). This would not be possible with a city-wide Wi-Fi network such as the one Earthlink proposes for San Francisco.

10. PRECAUTIONARY PRINCIPLE

Until appropriate guidelines can be introduced a number of international and national agencies are recommending adoption of the Precautionary Principle that was presented at the Rio Conference on Environment and Development in Brazil in 1992. The precautionary principle has been recommended for both radio frequency radiation and electromagnetic fields.

The Precautionary Principle (PP) states that:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capability. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

San Francisco's Precautionary Principle identifies 5 essential elements to decision-making as follows (City and County of San Francisco Environment Code, Chapter 1, Section 101.):

1. Anticipatory Action
2. Right to Know
3. Alternative Assessment
4. Full Cost Accounting
5. Participatory Decision Process

This document states that, *"There is a duty to take anticipatory action to prevent harm. Government, business, and community groups, as well as the general public, share this responsibility."*

11. CERTIFICATE OF DETERMINATION

An important issue that relates to the *Certificate of Determination of Exemption/Exclusion from Environmental Review, Planning Department, City and County of San Francisco*, April 20, 2007 has yet to be raised and needs to be addressed.

Placing antennas near or on utility power lines may result in the wires acting as antennas and re-directing the radio frequency radiation. This has been documented in Italy (30). Measurements at a school near Huntington Beach California showed that the radio frequency radiation from a cell phone tower was re-radiating from the nearby high voltage transmission lines. It was also re-radiating from the metal fence that surrounded the school. This type of re-radiation can produce hotspots that are not normally calculated in exposure metrics since the exact configuration of the antennas and the surrounding structures need to be known and the Earthlink providers have yet to determine where specifically the antennas will be placed.

Radio frequency radiation can travel along electrical wires. This can affect power quality (referred to as dirty electricity) and result in adverse health effects. Milham and Morgan (24) investigated a potential cancer cluster at La Quinta Middle School in La Quinta, California. They found that 13 rooms in the school had very high levels of "dirty electricity" and the risk of cancer in these rooms was much higher than in "electrically clean" rooms. Teachers who never taught in these "dirty" rooms had a 1.8-fold risk of cancer while those who taught in these rooms had a 5.1-fold risk of cancer, and those who taught in these rooms and had been employed at this school for more than 10 years had a 7.1-fold risk of cancer.

Poor power quality can affect teacher health and wellbeing as well as student behavior as documented at Willowood School in Toronto, Canada. Improvement of power quality was associated with improved symptoms among both teachers and students in a blind study[9] (10). Poor power quality can also exacerbate symptoms of multiple sclerosis, diabetes (11) and asthma (12).

[9] "Blinding" is a basic tool of science used to minimize the placebo effect and the introduction of bias in research. In a single blind study the subject being tested is unaware if they are part of a test group or a control group.

Radio frequency on power lines is an area that clearly needs more research. See Letter X in Appendix 1. Overhead power lines and electrical conduits for MUNI are prevalent throughout San Francisco and the Earthlink Wi-Fi Network may result in further instances of dirty electricity adversely affecting city residents.

12. SUMMARY

Laboratory studies of radio frequency radiation as well as epidemiological studies of people who live near cell phone antennas and/or use wireless technology indicate adverse biological effects. These effects include increase in cancers, DNA breaks, impaired reproduction, increased permeability of the blood-brain barrier, altered calcium flux, changes in enzyme activity, neurological disorders, altered brainwave activity, insomnia, decreased memory, inattention, slower reaction time, tinnitus, dizziness, skin disorders, headaches, chronic pain, chronic fatigue, respiratory problems and arrhythmia. A growing population is becoming sensitive to electromagnetic energy and some of these people are affected by radio frequency radiation and are unable to live near antennas. Animals that live near cell phone and broadcast antennas are also affected by RF radiation, which manifests itself in reproductive impairment and behavioral abnormalities.

The cancers and symptoms of EHS occur at levels well below the FCC guidelines for radio frequency radiation. These guidelines are based on short-term (30-minute) thermal effects and are inadequate to protect the population from long-term, non-thermal exposure. The FCC guidelines conform to ICNIRP guidelines (15) but are much higher (i.e. less protective) than guidelines in other countries.

Metal objects such as wiring in the home, fences, poles, roofs, filing cabinets can redirect RFR and create hot spots or interfere with reception. This applies to metal implants and metal objects on or near the body (zippers, glasses, jewelry, etc.). For this reason calculations of exposure may not be as reliable as actually measurements. Appeals and resolutions from physicians and scientist request governments to provide the strictest guidelines for RF exposure and address the growing number of people developing a sensitivity to this form of energy.

13. RECOMMENDATION

The Board of Supervisors of the City and County of San Francisco should adopt the precautionary principle in their decision regarding the Earthlink Wi-Fi Network. The scientific evidence indicates that exposure to radio frequency radiation near cell phone antennas and in laboratory studies is associated with and/or causes adverse biological and health effects at levels well below federal guidelines and at levels to which people who use wireless computers are likely to be exposed. Policy makers and the public should heed the warning that this form of energy, at current exposures, is far from benign and should act accordingly to protect human health and the environment.

Since cumulative radio frequency exposures are unknown from currently operating antennas and towers, a baseline analysis is important to determine what these current exposure conditions are at present. This should be done prior to approval of a Wi-Fi system. An exposure assessment

should be done in accordance with the California Environmental Quality Act (CEQA) guidelines to determine that there are no health risks.

Blanketing San Francisco with yet another source of radio frequency radiation in addition to the existing cell phone, broadcast, and essential police, fire, ambulance communication antennas is likely to result in a growing number of people becoming ill.

Those who have to make decisions about where antennas should be placed are seldom provided with all the facts. Often they are given conflicting information and side with the industry because they don't want to stand in the way of "progress." The oath of office that most public officials take requires protecting public health and may require swimming against the tide in order to do what is right.

The Board of Supervisors will be shown studies that document no adverse effects of this technology and they will be told the scientific evidence in contradictory and inconclusive. The underlying assumption is that until science can prove this form of energy is harmful, until scientists understand the mechanisms involved, until every study shows the same thing, we should allow human exposure. That approach could be tantamount to the costly history lesson of smoking and lung cancer; asbestos exposure and mesothelioma; DDT and loss of bird populations.

Science does not have all the answers and the understanding of mechanism is incomplete. However, according to the Precautionary Principle "threats of serious or irreversible damage" is all that is needed to act.

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15 APPENDICES

1. Black on White: Voices and Witnesses about Electro-Hypersensitivity

2. Studies documenting biological effects of radio frequency radiation at low intensities. Compiled by Dr. Henry Lai, University of Washington.

3. Sunday Times, 2007. Cancer clusters at phone masts

4. Salzburg Resolution, 2000.

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8. IDEA 2005

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Appendix 1

BLACK ON WHITE: VOICES AND WITNESSES ABOUT ELECTRO-HYPERSENSITIVITY, THE SWEDISH EXPERIENCE

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A list of symptoms doesn't convey the reality of what life is like for someone who has electrohypersensitivity. Below people with EHS share their stories of what it means to be sensitivity to electromagnetic energy. The cost is far greater than ill health. It involves impaired family life, social isolation, loss of productive work, and loss of dignity.

Being so severely electro-hypersensitive is like being a hermit in an infernal hell. (Letter 54)

I am a nurse anesthetist by profession and in September 1993, I began working with a computer expert to design a booking program for an operation ward. Worked three days a week with this, Tuesday-Thursday. Worked with two computers simultaneously, of the model where the computer is situated on the table under the monitor.

Had only worked a few weeks when the problems began, with eye irritation and headaches. Then came one symptom after the other in rapid succession, such as a throbbing in my teeth in both the upper and lower jaws, mild dizziness, mild nausea, ice-cold feet, sleep disorders, sweating and shivering during the night and extreme tiredness. The headaches were terrible on Fridays, after three working days, but decreased during the weekends and had nearly vanished on Tuesday, when I began working again. During weekends, I had to lie down in the middle of the day. Was extremely tired.

There was a ten-day break from working with the computers between Christmas and New Year, and during those days, one symptom after the other disappeared. Since I have a sister who is electro-hypersensitive, I now understood what it was all about. Realized that I had to stop working with computers. It was with deep regret that I asked not to work with computers, because the work was perfectly suited to me. The headaches, dizziness, nausea, sweating, shivers and the cold feet had disappeared during the ten-day break, but it took three weeks before the sleep disorder disappeared and an additional couple of weeks before my teeth felt normal again. (Letter 19)

One and a-half years ago, i.e. the fall of 1998, I developed electro-hypersensitivity and sensitivity to cell phones and transmitters. If I am in the vicinity of someone talking on a cell phone, I come down with influenza-like symptoms, with pain throughout my body, a feeling of fever without actually having a fever, headaches and a sore throat. These symptoms disappear after one or two days, but can remain longer if the exposition to the mobile radiation had been extensive.

When I ride the bus or the subway during rush hour, there are often so many people talking on phones at the same time that it is impossible to maintain an adequate distance from them.

Even transmitters around the city are a problem. Some bus stops are located so close to transmitters that I can't wait there, but instead have to walk several bus stops away to find one I can wait at. If I am in a building located opposite a transmitter, the same symptoms arise.

Since I have never had any previous problems whatsoever with electrical apparatus, I have tried to find out if anything in my surroundings has changed. I discovered that cellular telephone transmitters were erected in October 1997 in the TV mast situated a few hundred meters from my apartment. As early as the summer of 1998, I began to feel a bit tired and became progressively more tired until the autumn, but never thought that it could be a preliminary stage to electro-hypersensitivity. I only understood this when it was determined that I suffered from electro-hypersensitivity.

I have now reached the conclusion that my electro-hypersensitivity was brought on by the fact that I was constantly exposed at home to microwave radiation from the transmitter. (Letter 295)

In January 1998, we received a letter from the local housing authority informing us that they wanted to build a new mast and a technical shed on a site approximately 90 meters from our house, located in a residential area. This inquiry went out to our closest neighbors, since according to the current development plan the land may only be used for parks or gardens. A mast had been located at the same location for approximately 15-20 years. One neighbor wondered whether it might disrupt TV reception, but otherwise we didn't think it would cause any inconvenience. The letter did not say a single word about what the mast would contain.

The new mast was erected a week after midsummer and in the middle of July, during the summer break, I began to feel ill. I woke up in the middle of the night due to a tingling sensation in my skin and a headache, and I was drenched in sweat. There was pain in my joints, bone structure, muscles, rashes on my arms, and I became tired and had trouble concentrating. My whole body came to a "stop". I walked around the house at night, trying to find the place where I was least bothered. When I was in town, I noticed that I felt ill in the vicinity of fluorescent lamps and large speakers. The only change that had occurred in my environment was the new mast. (Letter 377)

Back in 1978, I first felt the high frequency field from my transmitting equipment. I knew nothing of the risks at that time. At the beginning, my problems were harmless, but they became progressively more severe: Nausea, dizziness, headaches, visual problems, balance, memory and speech, depending upon the strength of the field. The problem first occurred at 145 MHz and thereafter, in order, on amateur bandwidths 28, 21, 14, 7, 3.5 and 1.8 MHz. I mainly sent telegraphy at high speeds but also made use of SSB11 telephony. On VHF 145 MHz, I only used FM telephony. On the high frequency bands, my transmitter power was high, the antenna configuration large.

After a while I also became hypersensitive to low frequency fields as well as TV and computer screens, fluorescent lamps, cellular phones etc. In the course of time I also developed severe heart problems, which were significantly related to being exposed to EM fields: Very strong atrial fibrillation in which the heart rate reaches up to 230 beats per minute and where the heart races completely out of control. (Letter 22)

A person suffering from electro-hypersensitivity was offered the chance to rent a cottage deep in the forest, far from any neighbors. The cottage had been connected to the electric power lines thirty years ago, but these were now disconnected. The power lines were situated approximately 300 meters away.

The first day, the person sat outdoors for several hours and came to the conclusion that the environment was good and that it didn't cause any problems.
The next day, the person tested the indoor environment. After just a short time came the comment, "I can't stay here ".

When measured, the old electrical installation that had been left proved to be a perfect antenna for high-frequency airborne signals!

Once the electrical installation was dismantled, the problem disappeared and the situation has remained stable for four years. (Letter X)

Some of my experiences with electro-hypersensitivity deal with microwave radiation, which has become a major problem. You can gain control of the rest of electricity (it can be turned off, moved and isolated). Mobile telephone antennas transmit constantly and penetrate just about everything. If one becomes sensitive to microwaves, then airplanes also become a major problem, with their radar and transponders that more or less knock you out. It wouldn't surprise me if the nervous system of someone suffering from electro-hypersensitivity were overloaded. (Letter 400)

Then came the next setback. Cellular telephones had made their way into our so idyllic life. Summer guests began to come, and with them cellular phones, to this private road, with a mast situated three kilometers from our house. That was the start of another "hell". The symptoms: disrupted speech ability, breathing difficulties, heart palpitations, difficulty walking. I couldn't stay at home. I had to leave in the middle of the night and go to my son in Lund.

This was repeated several times. On one occasion I went to the emergency ward, and was allowed to stay overnight. The tests taken didn't show anything abnormal. The way the doctors treated me was very degrading.

Since then, the neighbors have shown a great deal of consideration for the circumstances. Moreover, we have been allowed to put up a sign with the text: Cellular phone free zone. Permission was given by all the members of the road association. (Letter 355)

Cellular telephony is absolutely the biggest problem for us. In the beginning of the 90's going outside was enough to be rid of the symptoms. But the situation today is different. I, and many with me, often feel worse outdoors. The only times I can feel myself to be completely free of symptoms today is in such places as air-raid shelters, with thick concrete walls and ceilings, when the electricity inside has been shut off. In areas where there is no coverage for cellular phones, such as in western Orsa Finnmark, I feel fine everywhere. (Letter 229)

The symptoms that I get from microwaves include dizziness, nausea, weakness, tremors, impaired hearing, tunnel vision, speech impairments, and if I don't make my way to a place with a lower microwave level, eventually unconsciousness. The recovery time after a period of unconsciousness can be quite extended depending upon the exposure, sometimes many weeks.

There are two sources of microwaves that, probably due to their modulation, have a powerful effect on me: mobile telephony and radar and communications systems for aircraft. (Letter 337)

Today, the environment has deteriorated for those of us with electro-hypersensitivity, primarily because of the increasing use of cellular phones. Transmitters for mobile telephony will soon be everywhere; on buildings and roofs in densely built-up areas, on masts in forests and in the countryside, so that nature is full of microwave radiation. There are people with cellular phones stuck to their ears or in their pockets in stores, in public places, on the streets and sidewalks, so that you are surrounded by permanent and mobile radiation heaters. This makes life a real misery for those of us with electro-hypersensitivity.

I have moved quite often in recent years to try to get away from the problems, but I am still searching for someplace where there is an electricity-free environment without necessarily being a pure wilderness with no infrastructure. (Letter 407)

We who are writing this are a mast refugee family, all of whom have been severely afflicted by radiation from a mobile base station. After moving, the mother and children have recovered almost completely and the symptoms only recur in connection with prolonged exposure

to masts or cellular phones. The son cannot watch TV or use a computer since it makes him feel sick. Nor can he spend extended periods of time in an urban environment or with friends.

He is 9-years old and has a tough life ahead of him as electro-hypersensitive. The father received a severe radiation injury due to frequent use of cellular phones. And when he was in the apartment with a base station transmitter outside of the bedroom window, he developed total electro-hypersensitivity, and today he can only be outdoors for short periods wearing a specially-made protective suit, the rest of the time he spends in a protective room with candles as the only form of illumination. (Letter 327)

For the past few days I have been sleeping in the car beneath a large rock on a beach in Spain. I do so to avoid such symptoms as pressure over my chest, cramps, difficulties thinking, abnormal tiredness and sleep disorders. When subjected to extended exposure to microwaves, there is blood in my nose and throat. In certain instances, a feeling of paralysis in my legs and difficulties walking.

My situation changed when I began reacting to a mast that was erected about 400 meters from my home, a transmitter for GSM's mobile telephone system.

This forced me to leave both my home and my job. Afterwards, I searched all over Sweden for another place to live, but was obliged to leave them as the expansion of the mobile telephone system caught up with me. I finally took to living and sleeping in a car.

I spent the winter in Spain, which I am now doing for the second year. This year, however, I have had to live in a car in order to find new locations. The expansion of mobile telephony is going very quickly here as well.

When I am able to find a "clean" spot, I am practically healthy, even though I am affected fairly badly when I can't get away. My body and psyche can't take an unlimited amount of damage. Microwaves are not a natural part of our environment.
I think I should have the right to live in Sweden - don't I? (Letter 221)

Having an electro-hypersensitive person in the family affects the whole family. There are a lot of things we can't do that all the normal families take for granted. We can't even invite mother home for dinner, because she doesn't feel well in my apartment and can't spend time here. We can't do any of the small, simple things as an entire family, such as going shopping, going to the movies or visiting relatives, because mother can't join us. (Letter 145)

I was not able to visit my sick mother, be at her deathbed or attend her funeral due to my electro-hypersensitivity. I haven't been able to go to doctors or hospitals to receive care, visit relatives, friends, acquaintances for the past ten years. I cannot take care of my errands in the community myself, since the technology there is harmful to me. I am as good as cut off from society and social contact.

Where am I to go when my husband is no longer by my side? There are times when I need assistance 24-hours a day, when dizziness knocks me completely out of commission. And where am I to go in a few years? There are no homes for the elderly that have gone through EMF-reduction, but there seems to be a National Board of Health and Welfare that has had EMF-reduction. (Letter 273)

Appendix 2

STUDIES SHOWING ADVERSE BIOLOGICAL EFFECTS OF RADIO FREQUENCY RADIATION AT LOW INTENSITIES.

Compiled by Dr. Henry Lai, University of Washington.

Source of literature and abstracts (Table 2):

(1) Balode, Z, Assessment of radio-frequency electromagnetic radiation by the micronucleus test in bovine peripheral erythrocytes. ***Sci Total Environ*** **180(1):81-85, 1996.**

Previous bioindicative studies in the Skrunda Radio Location Station area have focused on the somatic influence of electromagnetic radiation on plants, but it is also important to study genetic effects. We have chosen cows as test animals for cytogenetical evaluation because they live in the same general exposure area as humans, are confined to specific locations and are chronically exposed to radiation. Blood samples were obtained from female Latvian Brown cows from a farm close to and in front of the Skrunda Radar and from cows in a control area. A simplified alternative to the Schiff method of DNA staining for identification of micronuclei in peripheral erythrocytes was applied. Microscopically, micronuclei in peripheral blood erythrocytes were round in shape and exhibited a strong red colour. They are easily detectable as the only coloured bodies in the uncoloured erythrocytes. From each individual animal 2000 erythrocytes were examined at a magnification of x 1000 for the presence of micronuclei. The counting of micronuclei in peripheral erythrocytes gave low average incidences, 0.6 per 1000 in the exposed group and 0.1 per 1000 in the control, but statistically significant ($P < 0.01$) differences were found in the frequency distribution between the control and exposed groups.

(2) Boscol P, Di Sciascio MB, D'Ostilio S, Del Signore A, Reale M, Conti P, Bavazzano P, Paganelli R, Di Gioacchino M. Effects of electromagnetic fields produced by radiotelevision broadcasting stations on the immune system of women. ***Sci Total Environ*** **273(1-3):1-10, 2001.**

The object of this study was to investigate the immune system of 19 women with a mean age of 35 years, for at least 2 years (mean = 13 years) exposed to electromagnetic fields (ELMFs) induced by radiotelevision broadcasting stations in their residential area. In September 1999, the ELMFs (with range 500 KHz-3 GHz) in the balconies of the homes of the women were (mean +/- S.D.) 4.3 +/- 1.4 V/m. Forty-seven women of similar age, smoking habits and atopy composed the control group, with a nearby resident ELMF exposure of < 1.8 V/m. Blood lead and urinary trans-trans muconic acid (a metabolite of benzene), markers of exposure to urban traffic, were higher in the control women. The ELMF exposed group showed a statistically significant reduction of blood NK CD16+-CD56+, cytotoxic CD3(-)-CD8+, B and NK activated CD3(-)-HLA-DR+ and CD3(-)-CD25+ lymphocytes. 'In vitro' production of IL-2 and interferon-gamma (INF-gamma) by peripheral blood mononuclear cells (PBMC) of the ELMF exposed group, incubated either with or without phytohaemoagglutinin (PHA), was significantly lower; the 'in vitro' production of IL-2 was significantly correlated with blood CD16+-CD56+ lymphocytes. The stimulation index (S.I.) of blastogenesis (ratio between cell proliferation with and without PHA) of PBMC of ELMF exposed women was lower than that of the control subjects. The S.I. of blastogenesis of the ELMF exposed group (but not blood NK lymphocytes and the 'in vitro' production of IL-2 and INF-gamma by PBMC) was significantly correlated with the ELMF levels. Blood lead and urinary trans-trans muconic acid were barely correlated with immune parameters: the urinary metabolite of benzene of the control group was only correlated with CD16+-CD56+ cells indicating a slight effect of traffic on the immune system. In conclusion, this study demonstrates that high frequency ELMFs reduce cytotoxic activity in the peripheral blood of women without a dose-response effect.

(3) Chiang H, Yao GD, Fang QS, Wang KQ, Lu DZ, Zhou YK, Health effects of environmental electromagnetic fields. ***J. Bioelectricity*** **8:127-131, 1989.**

We investigated the effects of exposure to environmental electromagnetic fields (EMFs) in 1170 subjects. Neutrophil phagocytosis was enhanced in the low-intensity exposure groups, but reduced significantly at relatively higher intensities. Visual reaction time was prolonged and the scores of short-term memory tests were lower in some high-intensity exposure groups. EMFs may affect the central nervous and immune systems in man.

(4) de Pomerai D, Daniells C, David H, Allan J, Duce I, Mutwakil M, Thomas D, Sewell P, Tattersall J, Jones D, Candido P, Non-thermal heat-shock response to microwaves, *Nature* 405:417-418, 2000.

Nematode worms (C. elegans) exposed overnight to 750-MHz microwaves at a SAR of 0.001 W/kg showed an increased in heat shock proteins (HSPs). (Heat shock proteins are induced in most organisms by adverse conditions (such as heat or toxins) that cause damage to cellular proteins, acting as molecular chaperones to rescue damaged proteins). The authors give several arguments that the microwave-induced effect on HSPs is non-thermal and suggest that 'current exposure limits for microwave equipment may need to be reconsidered.'

(5a) de Pomerai DI, Dawe A, Djerbib L, Allan, Brunt G, Daniells C. Growth and maturation of the nematode *Caenorhabditis elegans* following exposure to weak microwave fields. *Enzyme Microbial Tech* 30:73-79, 2002.

Prolonged exposure to weak microwave fields (750 1000 MHz, 0.5 W) at 25°C induces a heat-shock response in transgenic *C. elegans* strains carrying *hsp16* reporter genes [1]. A comparable response to heat alone requires a substantially higher temperature of 28°C, suggesting that microwave heating of worms or of the system as a whole might provide a sufficient explanation, although this can be ruled out by indirect arguments [1]. Here we investigate two further biological consequences of prolonged microwave exposure at 25°C in synchronised cultures of wild-type worm larvae, namely alterations in (i) growth rate (GR) and (ii) the proportion of worms later maturing into egg-bearing adults (MP). Both of these parameters are significantly increased following microwave exposure (GR by 8 11%, and MP by 28 40%), whereas both are significantly decreased (GR by 10% and MP almost abolished) after mild heat treatment at 28°C for the same period. It follows that the biological consequences of microwave exposure are opposite to, and therefore incompatible with, those attributable to mild heating. This evidence does not in itself necessitate a non-thermal mechanism, but does eliminate explanations that invoke the bulk heating of tissues by microwaves. This latter, however, remains the sole basis for current regulations governing microwave exposure.

(5b) de Pomerai DI, Smith B, Dawe A, North K, Smith T, Archer DB, Duce IR, Jones D, Candido EP. Microwave radiation can alter protein conformation without bulk heating. *FEBS Lett* 22;543(1-3):93-97, 2003.

Exposure to microwave radiation enhances the aggregation of bovine serum albumin in vitro in a time- and temperature-dependent manner. Microwave radiation also promotes amyloid fibril formation by bovine insulin at 60 degrees C. These alterations in protein conformation are not accompanied by measurable temperature changes, consistent with estimates from field modelling of the specific absorbed radiation (15-20 mW kg(-1)). Limited denaturation of cellular proteins could explain our previous observation that modest heat-shock responses are induced by microwave exposure in Caenorhabditis elegans. We also show that heat-shock responses both to heat and microwaves are suppressed after RNA interference ablating heat-shock factor function.

(6) D'Inzeo G, Bernardi P, Eusebi F, Grassi F, Tamburello C, Zani BM, Microwave effects on acetylcholine-induced channels in cultured chick myotubes. *Bioelectromagnetics* 9(4):363-372, 1988.

The behavior of cultured myotubes from chick embryos exposed to microwaves has been experimentally analyzed. Recordings of acetylcholine-induced currents have been obtained via patch-clamp techniques using both cell-attached (single-channel current recording) and whole-cell (total current recording) configurations. During the exposure to low-power microwaves the frequency of the ACh-activated single channel openings decreased, while the ACh-induced total current showed a faster falling phase. Channel open time and conductance were not affected by microwave irradiation. It is concluded that the exposure to microwaves increases the rate of desensitization and decreases the channel opening probability. The nonthermal origin and the molecular interaction mechanisms governing these electromagnetic-induced effects are discussed.

(7) Dolk H, Shaddick G, Walls P, Grundy C, Thakrar B, Kleinschmidt I, Elliott P, Cancer incidence near radio and television transmitters in Great Britain. I. Sutton Coldfield transmitter. ***Am J Epidemiol*** **145(1):1-9, 1997.**

A small area study of cancer incidence in 1974-1986 was carried out to investigate an unconfirmed report of a "cluster" of leukemias and lymphomas near the Sutton Coldfield television (TV) and frequency modulation (FM) radio transmitter in the West Midlands, England. The study used a national database of postcoded cancer registrations, and population and socioeconomic data from the 1981 census. Selected cancers were hematopoietic and lymphatic, brain, skin, eye, male breast, female breast, lung, colorectal, stomach, prostate, and bladder. Expected numbers of cancers in small areas were calculated by indirect standardization, with stratification for a small area socioeconomic index. The study area was defined as a 10 km radius circle around the transmitter, within which 10 bands of increasing distance from the transmitter were defined as a basis for testing for a decline in risk with distance, and an inner area was arbitrarily defined for descriptive purposes as a 2 km radius circle. The risk of adult leukemia within 2 km was 1.83 (95% confidence interval 1.22-2.74), and there was a significant decline in risk with distance from the transmitter ($p = 0.001$). These findings appeared to be consistent over the periods 1974-1980, 1981-1986, and were probably largely independent of the initially reported cluster, which appeared to concern mainly a later period. In the context of variability of leukemia risk across census wards in the West Midlands as a whole, the Sutton Coldfield findings were unusual. A significant decline in risk with distance was also found for skin cancer, possibly related to residual socioeconomic confounding, and for bladder cancer. Study of other radio and TV transmitters in Great Britain is required to put the present results in wider context. No causal implications can be made from a single cluster investigation of this kind.

(8) Dutta SK, Ghosh B, Blackman CF, Radiofrequency radiation-induced calcium ion efflux enhancement from human and other neuroblastoma cells in culture. ***Bioelectromagnetics*** **1989;10(2):197-202**

To test the generality of radiofrequency radiation-induced changes in 45Ca2+ efflux from avian and feline brain tissues, human neuroblastoma cells were exposed to electromagnetic radiation at 147 MHz, amplitude-modulated (AM) at 16 Hz, at specific absorption rates (SAR) of 0.1, 0.05, 0.01, 0.005, 0.001, and 0.0005 W/kg. Significant 45Ca2+ efflux was obtained at SAR values of 0.05 and 0.005 W/kg. Enhanced efflux at 0.05 W/kg peaked at the 13-16 Hz and at the 57.5-60 Hz modulation ranges. A Chinese hamster-mouse hybrid neuroblastoma was also shown to exhibit enhanced radiation-induced 45Ca2+ efflux at an SAR of 0.05 W/kg, using 147 MHz, AM at 16 Hz. These results confirm that amplitude-modulated radiofrequency radiation can induce responses in cells of nervous tissue origin from widely different animal species, including humans. The results are also consistent with the reports of similar findings in avian and feline brain tissues and indicate the general nature of the phenomenon.

(9) Fesenko, EE, Makar, VR, Novoselova, EG, Sadovnikov, VB, Microwaves and cellular immunity. I. Effect of whole body microwave irradiation on tumor necrosis factor production in mouse cells. ***Bioelectrochem Bioenerg*** **49(1):29-35, 1999.**

Whole body microwave sinusoidal irradiation of male NMRI mice with 8.15-18 GHz (1 Hz within) at a power density of 1 microW/cm^2 caused a significant enhancement of TNF production in peritoneal macrophages and splenic T lymphocytes. Microwave radiation affected T cells, facilitating their capacity to proliferate in response to mitogenic stimulation. The exposure duration necessary for the stimulation of cellular immunity ranged from 5 h to 3 days. Chronic irradiation of mice for 7 days produced the decreasing of TNF production in peritoneal macrophages. The exposure of mice for 24 h increased the TNF production and immune proliferative response, and these stimulatory effects persisted over 3 days after the termination of exposure. Microwave treatment increased the endogenously produced TNF more effectively than did lipopolysaccharide, one of the most potential stimuli of synthesis of this cytokine. The role of microwaves as a factor interfering with the process of cell immunity is discussed.

(10) Hjollund NH, Bonde JP, Skotte J, Semen analysis of personnel operating military radar equipment. ***Reprod Toxicol*** **11(6):897, 1997.**

This is a preliminary survey of semen quality among Danish military personnel operating mobile ground-to-air missile units that use several microwave emitting radar systems. The maximal mean exposure was estimated to be

0.01 mW/cm2. The median sperm density of the military personnel was significantly low compared to the references. The difference is either due to chance, uncontrolled bias, or nonthermal effects of transitory microwaves.

(11) Hocking B, Gordon IR, Grain HL, Hatfield GE, Cancer incidence and mortality and proximity to TV towers. ***Med J Aust*** **165(11-12):601-605, 1996. (Published erratum appears in** ***Med J Aust*** **166(2):80, 1997.)**

OBJECTIVE: To determine whether there is an increased cancer incidence and mortality in populations exposed to radiofrequency radiations from TV towers. DESIGN: An ecological study comparing cancer incidence and mortality, 1972-1990, in nine municipalities, three of which surround the TV towers and six of which are further away from the towers. (TV radiofrequency radiation decreases with the square of the distance from the source.) Cancer incidence and mortality data were obtained from the then Commonwealth Department of Human Services and Health. Data on frequency, power, and period of broadcasting for the three TV towers were obtained from the Commonwealth Department of Communications and the Arts. The calculated power density of the radiofrequency radiation in the exposed area ranged from 8.0 microW/cm^2 near the towers to 0.2 microW/cm^2 at a radius of 4km and 0.02 microW/cm^2 at 12 km. SETTING: Northern Sydney, where three TV towers have been broadcasting since 1956. OUTCOME MEASURES: Rate ratios for leukaemia and brain tumour incidence and mortality, comparing the inner with the outer areas. RESULTS: For all ages, the rate ratio for total leukaemia incidence was 1.24 (95% confidence interval [CI], 1.09-1.40). Among children, the rate ratio for leukaemia incidence was 1.58 (95% CI, 1.07-2.34) and for mortality it was 2.32 (95% CI, 1.35-4.01). The rate ratio for childhood lymphatic leukaemia (the most common type) was 1.55 (95% CI, 1.00-2.41) for incidence and 2.74 (95% CI, 1.42-5.27) for mortality. Brain cancer incidence and mortality were not increased. CONCLUSION: We found an association between increased childhood leukaemia incidence and mortality and proximity to TV towers.

(12) Ivaschuk OI, Jones RA, Ishida-Jones T, Haggren W, Adey WR, Phillips JL, Exposure of nerve growth factor-treated PC12 rat pheochromocytoma cells to a modulated radiofrequency field at 836.55 MHz: effects on c-jun and c-fos expression. ***Bioelectromagnetics*** **18(3):223-229, 1997.**

Rat PC12 pheochromocytoma cells have been treated with nerve growth factor and then exposed to athermal levels of a packet-modulated radiofrequency field At 836.55 MHz. This signal was produced by a prototype time-domain multiple-access (TDMA) transmitter that conforms to the North American digital cellular telephone standard. Three slot average power densities were used: 0.09, 0.9, and 9 mW/cm2. Exposures were for 20, 40, and 60 min and included an intermittent exposure regimen (20 min on/20 min off), resulting in total incubation times of 20, 60, and 100 min, respectively. Concurrent controls were sham exposed. After extracting total cellular RNA, Northern blot analysis was used to assess the expression of the immediate early genes, c-fos and c-jun, in all cell populations. No change in c-fos transcript levels were detected after 20 min exposure at each field intensity (20 min was the only time period at which c-fos message could be detected consistently). Transcript levels for c-jun were altered only after 20 min exposure to 9 mW/cm2 (average 38% decrease).

(13) Kolodynski AA, Kolodynska VV, Motor and psychological functions of school children living in the area of the Skrunda Radio Location Station in Latvia. ***Sci Total Environ*** **180(1):87-93, 1996.**

This paper presents the results of experiments on school children living in the area of the Skrunda Radio Location Station (RLS) in Latvia. Motor function, memory and attention significantly differed between the exposed and control groups. Children living in front of the RLS had less developed memory and attention, their reaction time was slower and their neuromuscular apparatus endurance was decreased.

(14) Kwee S, Raskmark P, Velizarov P. Changes in cellular proteins due to environmental non-ionizing radiation. I. Heat-shock proteins. ***Electro- and Magnetobiology*** **20: 141-152, 2001.**

This paper describes the effect of weak microwave fields on the amounts of heat-shock proteins in cell cultures at various temperatures. The field was generated by signal simulation of the Global System for Mobile communications (GSM) of 960 Mhz, used in portable phones. Transformed human epithelial amnion (AMA) cells, growing on glass coverslips, were exposed in a transverse electromagnetic (TEM) cell to a microwave field, generating a specific absorption rate (SAR) of 2.1 mW.kg^{-1} in the cells. Exposure temperatures were 35, 37, and 40 ± 0.1°C, respectively, and the exposure time was 20 min. The heat-shock proteins Hsp-70 and Hsp-27 were detected by immuno-fluorescence. Higher amounts of Hsp-70 were present in the cells exposed at 35 and 37°C than in the

sham-exposed cells. These effects can be considered to be athermal, since the field strength was much lower than the safety standard for absence of heat generation by microwave fields. There was no significant response in the case of Hsp-27.

(15) Lebedeva NN, Sulimov AV, Sulimova OP, Kotrovskaya TI, Gailus T, Cellular phone electromagnetic field effects on bioelectric activity of human brain. ***Crit Rev Biomed Eng*** **28(1-2):323-337, 2000.**

24 volunteers participated in the experiments. The investigation of EEG reactions to cellular phone (EMF frequency 902.4 MHz and intensity 0.06 mW/cm2) was conducted. Two experiments were performed with each subject--cellular phone exposure and Placebo Duration of the experiment was 60 min: 15 min--background; 15 min--EMF exposure or Placebo; 30 min—after exposure. EEG was recorded in 16 standard leads with "eyes open" and "eyes closed". Special software with non-linear dynamics was developed for EEG analyses. One parameter, multichannel (global) correlation dimension, was calculated. The changes of these parameters can be evidence of brain functional state changes. As a result of EEG record processing, a significant increase of global correlation dimension during the exposure and after exposure period was discovered, more pronounced in the case of "eyes closed". That can be viewed as the manifestation of cortex activation under phone EMF exposure.

(16) Magras, IN, Xenos, TD, RF radiation-induced changes in the prenatal development of mice. ***Bioelectromagnetics*** **18(6):455-461, 1997.**

The possible effects of radiofrequency (RF) radiation on prenatal development has been investigated in mice. This study consisted of RF level measurements and in vivo experiments at several places around an "antenna park." At these locations RF power densities between 168 nW/cm2 and 1053 nW/cm2 were measured. Twelve pairs of mice, divided in two groups, were placed in locations of different power densities and were repeatedly mated five times. One hundred eighteen newborns were collected. They were measured, weighed, and examined macro- and microscopically. A progressive decrease in the number of newborns per dam was observed, which ended in irreversible infertility. The prenatal development of the newborns, however, evaluated by the crown-rump length, the body weight, and the number of the lumbar, sacral, and coccygeal vertebrae, was improved.

(17) Mann, K, Wagner, P, Brunn, G, Hassan, F, Hiemke, C, Roschke, J, Effects of pulsed high-frequency electromagnetic fields on the neuroendocrine system. ***Neuroendocrinology*** **67(2):139-144, 1998.**

The influence of pulsed high-frequency electromagnetic fields emitted from a circularly polarized antenna on the neuroendocrine system in healthy humans was investigated (900 MHz electromagnetic field, pulsed with 217 Hz, average power density 0.02 mW/cm2). Nocturnal hormone profiles of growth hormone (GH), cortisol, luteinizing hormone (LH) and melatonin were determined under polysomnographic control. An alteration in the hypothalamo-pituitary-adrenal axis activity was found with a slight, transient elevation in the cortisol serum level immediately after onset of field exposure which persisted for 1 h. For GH, LH and melatonin, no significant effects were found under exposure to the field compared to the placebo condition, regarding both total hormone production during the entire night and dynamic characteristics of the secretion pattern. Also the evaluation of the sleep EEG data revealed no significant alterations under field exposure, although there was a trend to an REM suppressive effect. The results indicate that weak high-frequency electromagnetic fields have no effects on nocturnal hormone secretion except for a slight elevation in cortisol production which is transient, pointing to an adaptation of the organism to the stimulus.

(18) Marinelli F, La Sala D, Cicciotti G, Cattini L, Trimarchi C, Putti S, Zamparelli A, Giuliani L, Tomassetti G, Cinti C. Exposure to 900 MHz electromagnetic field induces an unbalance between pro-apoptotic and pro-survival signals in T-lymphoblastoid leukemia CCRF-CEM cells. ***J Cell Physiol.*** **198(2):324-332, 2004.**

It has been recently established that low-frequency electromagnetic field (EMFs) exposure induces biological changes and could be associated with increased incidence of cancer, while the issue remains unresolved as to whether high-frequency EMFs can have hazardous effect on health. Epidemiological studies on association between childhood cancers, particularly leukemia and brain cancer, and exposure to low- and high-frequency EMF suggested an etiological role of EMFs in inducing adverse health effects. To investigate whether exposure to high-frequency EMFs could affect in vitro cell survival, we cultured acute T-lymphoblastoid leukemia cells (CCRF-CEM) in the

presence of unmodulated 900 MHz EMF, generated by a transverse electromagnetic (TEM) cell, at various exposure times. We evaluated the effects of high-frequency EMF on cell growth rate and apoptosis induction, by cell viability (MTT) test, FACS analysis and DNA ladder, and we investigated pro-apoptotic and pro-survival signaling pathways possibly involved as a function of exposure time by Western blot analysis. At short exposure times (2-12 h), unmodulated 900 MHz EMF induced DNA breaks and early activation of both p53-dependent and -independent apoptotic pathways while longer continuous exposure (24-48 h) determined silencing of pro-apoptotic signals and activation of genes involved in both intracellular (Bcl-2) and extracellular (Ras and Akt1) pro-survival signaling. Overall our results indicate that exposure to 900 MHz continuous wave, after inducing an early self-defense response triggered by DNA damage, could confer to the survivor CCRF-CEM cells a further advantage to survive and proliferate.

(19) Michelozzi P, Ancona C, Fusco D, Forastiere F, Perucci CA, Risk of leukemia and residence near a radio transmitter in Italy. *Epidemiology* 9 (Suppl) 354p, 1998.

We conducted a small area study to investigate a cluster of leukemia near a high power radio-transmitter in a peripheral area of Rome. The leukemia mortality within 3.5 km (5,863 inhabitants) was higher than expected (SMR=2.5, 95% confident interval 1.07-4.83); the excess was due to a significant higher mortality among men (7 cases observed, SMR=3.5). The results of the Stone's test, after adjusting for socio-economic confounding, showed a significant decline in risk with distance from the transmitter only among men (p=0.005), whereas the p-value for both sexes was p=0.07.

(20) Michelozzi P, Capon A, Kirchmayer U, Forastiere F, Biggeri A, Barca A, Perucci CA. Adult and childhood leukemia near a high-power radio station in Rome, Italy. *Am J Epidemiol* 155(12):1096-1103, 2002.

Some recent epidemiologic studies suggest an association between lymphatic and hematopoietic cancers and residential exposure to high-frequency electromagnetic fields (100 kHz to 300 GHz) generated by radio and television transmitters. Vatican Radio is a very powerful station located in a northern suburb of Rome, Italy. In the 10-km area around the station, with 49,656 residents (in 1991), leukemia mortality among adults (aged >14 years; 40 cases) in 1987-1998 and childhood leukemia incidence (eight cases) in 1987-1999 were evaluated. The risk of childhood leukemia was higher than expected for the distance up to 6 km from the radio station (standardized incidence rate = 2.2, 95% confidence interval: 1.0, 4.1), and there was a significant decline in risk with increasing distance both for male mortality (p = 0.03) and for childhood leukemia (p = 0.036). The study has limitations because of the small number of cases and the lack of exposure data. Although the study adds evidence of an excess of leukemia in a population living near high-power radio transmitters, no causal implication can be drawn. There is still insufficient scientific knowledge, and new epidemiologic studies are needed to clarify a possible leukemogenic effect of residential exposure to radio frequency radiation.

(21) Navakatikian MA, Tomashevskaya LA, Phasic behavioral and endocrine effects of microwaves of nonthermal intensity. In "Biological Effects of Electric and Magnetic Fields, Volume 1," D.O. Carpenter (ed) Academic Press, San Diego, CA, 1994, pp.333-342.

Microwaves at nonthermal levels are able to induce behavioral and endocrine changes at low power densities (0.01-0.1 mW/cm2). Our studies have demonstrated several phases of inhibition and activation. We suggest that inhibition of behavior by microwaves has many mechanisms depending on the strength and duration of exposure, and most inhibitory effects from direct actions on the nervous system. Activation, on the other hand, is correlated well with decreases in serum concentrations of testosterone and insulin. CW microwaves, however, have no influence on the secretion of insulin.

(22) Novoselova, EG, Fesenko, EE, Makar, VR, Sadovnikov, VB, Microwaves and cellular immunity. II. Immunostimulating effects of microwaves and naturally occurring antioxidant nutrients. *Bioelectrochem Bioenerg* 49(1):37-41, 1999.

The effect of 8.15-18 GHz (1 Hz within) microwave radiation at a power density of 1 microW/cm^2 on the tumor necrosis factor (TNF) production and immune response was tested. A single 5 h whole-body exposure induced a significant increase in TNF production in peritoneal macrophages and splenic T cells. The mitogenic response in T

lymphocytes increased after microwave exposure. The activation of cellular immunity was observed within 3 days after exposure. The diet containing lipid-soluble nutrients (beta-carotene, alpha-tocopherol and ubiquinone Q9) increased the activity of macrophages and T cells from irradiated mice. These results demonstrate that irradiation with low-power density microwaves stimulates the immune potential of macrophages and T cells, and the antioxidant treatment enhances the effect of microwaves, in particular at later terms, when the effect of irradiation is reduced.

(23) Novoselova EG, Ogay VB, Sorokina OV, Glushkova OV, Sinotova OA, Fesenko EE. The production of tumor necrosis factor in cells of tumor-bearing mice after total-body microwave irradiation and antioxidant diet. Electromag. Biol. Med. 23:167-180, 2004.

The effects of repeated treatment with weak microwaves (MW) (8.15–18 GHz, 1 $\mu W/cm^2$, 1.5 h daily) and diet with antioxidants (AO) (β-carotene, α-tocopherol, and ubiquinone Q_9) on production of tumor necrosis factor (TNF) in macrophages and T lymphocytes of healthy and tumor-bearing mice (TBM) were studied. Tumor size and mortality of TBM were also followed. Microwave radiation and antioxidant diet stimulated production of TNF in cells from healthy mice. At early stages, tumor growth induced TNF production in mouse cells; however, this effect decreased as tumors grew. In TBM exposed to MW, TNF production was higher than in unirradiated TBM. Oppositely, AO diet induced TNF production in healthy mice but did not affect TNF secretion in TBM. Accordingly, prolonged treatment of TBM to MW, but not to AO diet, decreased tumor growth rate and increased overall animal longevity. These results suggest that diminished tumor growth rate due to extremely low-level MW exposure of mice carrying tumors, at least in part, was caused by enhancement in TNF production and accumulation of plasma TNF.

(24) Park SK, Ha M, Im H-J. Ecological study on residences in the vicinity of AM radio broadcasting towers and cancer death: preliminary observations in Korea. ***International Archives of Occupational and Environmental Health*** **77(6):387-394, 2004.**

Objectives Public health concern about the health effects of radio-frequency electromagnetic fields (RF-EMFs) has increased with the increase in public exposure. This study was to evaluate some health effect of RF exposure by the AM radio broadcasting towers in Korea.

Methods We calculated cancer mortality rates using Korean death certificates over the period of 1994–1995 and population census data in ten RF-exposed areas, defined as regions that included AM radio broadcasting towers of over 100 kW, and in control areas, defined as regions without a radio broadcasting tower inside and at least 2 km away from the towers.

Results All cancers-mortality was significantly higher in the exposed areas [direct standardized mortality rate ratio (MRR) =1.29, 95%CI=1.12–1.49]. When grouped by each exposed area and by electrical power, MRRs for two sites of 100 kW, one site of 250 kW and one site of 500 kW, for all subjects, and for one site of 100 kW and two sites of 250 kW, for male subjects, showed statistically significant increases without increasing trends according to the groups of electric power. Leukemia mortality was higher in exposed areas (MRR=1.70, 95% CI=0.84–3.45), especially among young adults aged under 30 years (0–14 years age group, MRR=2.29, 95% CI=1.05–5.98; 15–29 age group, MRR=2.44, 95% CI=1.07–5.24) .

Conclusions We observed higher mortality rates for all cancers and leukemia in some age groups in the area near the AM radio broadcasting towers. Although these findings do not prove a causal link between cancer and RF exposure from AM radio broadcasting towers, it does suggest that further analytical studies on this topic are needed in Korea.

(25) Persson BRR, Salford LG, Brun A, Blood-brain barrier permeability in rats exposed to electromagnetic fields used in wireless communication. ***Wireless Network*** **3:455-461, 1997.**

Biological effects of radio frequency electromagnetic fields (EMF) on the blood-brain barrier (BBB) have been studied in Fischer 344 rats of both sexes. The rats were not anesthetised during the exposure. The brains were perfused with saline for 3-4 minutes, and thereafter perfusion fixed with 4% formaldehyde for 5-6 minutes. Whole coronal sections of the brains were dehydrated and embedded in paraffin and sectioned at 5 micrometers. Albumin and fibinogen were demonstrated immunochemically and classified as normal versus pathological leakage. In the present investigation we exposed male and female Fischer 344 rats in a Transverse Electromagnetic Transmission

line camber to microwaves of 915 MHz as continuous wave (CW) and pulse-modulated with different pulse power and at various time intervals. The CW-pulse power varied from 0.001 W to 10 W and the exposure time from 2 min to 960 min. In each experiment we exposed 4-6 rats with 2-4 controls randomly placed in excited and non-excited TEM cells, respectively. We have in total investigated 630 exposed rats at various modulation frequencies and 372 controls. The frequency of pathological rats is significantly increased ($P< 0.0001$) from 62/372 (ratio 0.17 ± 0.02) for control rats to 244/630 (ratio: 0.39 ± 0.043) in all exposed rats. Grouping the exposed animals according to the level or specific absorption energy (J/kg) give significant difference in all levels above 1.5 J/kg. The exposure was 915 MHz microwaves either pulse modulated (PW) at 217 Hz with 0.57 ms pulse width, at 50 Hz with 6.6 ms pulse width or continuous wave (CW). The frequency of pathological rats (0.17) among controls in the various groups is not significantly different. The frequency of pathological rats was 170/480 (0.35 ± 0.03) among rats exposed to pulse modulated (PW) and 74/149 (0.50 ± 0.07) among rats exposed to continuous wave exposure (CW). These results are both highly significantly different to their corresponding controls ($p< 0.0001$) and the frequency of pathological rats after exposure to pulsed radiation (PW) is significantly less ($p< 0.002$) than after exposure to continuous wave radiation (CW).

(26) Phillips, J.L., Ivaschuk, O., Ishida-Jones, T., Jones, R.A., Campbell-Beachler, M. and Haggren, W. DNA damage in Molt-4 T- lymphoblastoid cells exposed to cellular telephone radiofrequency fields in vitro. ***Bioelectrochem. Bioenerg.*** **45:103-110, 1998.**

Molt-4 T-lymphoblastoid cells have been exposed to pulsed signals at cellular telephone frequencies of 813.5625 MHz (iDEN signal) and 836.55 MHz (TDMA signal). These studies were performed at low SAR (average = 2.4 and 24 microwatt/g for iDEN and 2.6 and 26 microwatt/g for TDMA) in studies designed to look for athermal RF effects. The alkaline comet, or single cell gel electrophoresis, assay was employed to measure DNA single-strand breaks in cell cultures exposed to the radiofrequency (RF) signal as compared to concurrent sham-exposed cultures. Tail moment and comet extent were calculated as indicators of DNA damage. Statistical differences in the distribution of values for tail moment and comet extent between exposed and control cell cultures were evaluated with the Kolmogorov-Smirnoff distribution test. Data points for all experiments of each exposure condition were pooled and analyzed as single groups. It was found that: 1) exposure of cells to the iDEN signal at an SAR of 2.4 microwatt/g for 2 h or 21 h significantly decreased DNA damage; 2) exposure of cells to the TDMA signal at an SAR of 2.6 microwatt/g for 2 h and 21 h significantly decreased DNA damage; 3) exposure of cells to the iDEN signal at an SAR of 24 microwatt/g for 2 h and 21 h significantly increased DNA damage; 4) exposure of cells to the TDMA signal at an SAR of 26 microwatt/g for 2 h significantly decreased DNA damage. The data indicate a need to study the effects of exposure to RF signals on direct DNA damage and on the rate at which DNA damage is repaired.

(27) Pologea-Moraru R, Kovacs E, Iliescu KR, Calota V, Sajin G. The effects of low level microwaves on the fluidity of photoreceptor cell membrane. ***Bioelectrochemistry*** **56(1-2):223-225, 2002.**

Due to the extensive use of electromagnetic fields in everyday life, more information is required for the detection of mechanisms of interaction and the possible side effects of electromagnetic radiation on the structure and function of the organism.In this paper, we study the effects of low-power microwaves (2.45 GHz) on the membrane fluidity of rod photoreceptor cells. The retina is expected to be very sensitive to microwave irradiation due to the polar character of the photoreceptor cells [Biochim. Biophys. Acta 1273 (1995) 217] as well as to its high water content [Stud. Biophys. 81 (1981) 39].

(28) Pyrpasopoulou A, Kotoula V, Cheva A, Hytiroglou P, Nikolakaki E, Magras IN, Xenos TD, Tsiboukis TD, Karkavelas G. Bone morphogenetic protein expression in newborn rat kidneys after prenatal exposure to radiofrequency radiation. ***Bioelectromagnetics*** **25(3):216-227, 2004.**

Effects of nonthermal radiofrequency radiation (RFR) of the global system of mobile communication (GSM) cellular phones have been as yet mostly studied at the molecular level in the context of cellular stress and proliferation, as well as neurotransmitter production and localization. In this study, a simulation model was designed for the exposure of pregnant rats to pulsed GSM-like RFR (9.4 GHz), based on the different resonant frequencies of man and rat. The power density applied was 5 microW/cm2, in order to avoid thermal electromagnetic effects as much as possible. Pregnant rats were exposed to RFR during days 1-3 postcoitum (p.c.)

(embryogenesis, pre-implantation) and days 4-7 p.c. (early organogenesis, peri-implantation). Relative expression and localization of bone morphogenetic proteins (BMP) and their receptors (BMPR), members of a molecular family currently considered as major endocrine and autocrine morphogens and known to be involved in renal development, were investigated in newborn kidneys from RFR exposed and sham irradiated (control) rats. Semi-quantitative duplex RT-PCR for BMP-4, -7, BMPR-IA, -IB, and -II showed increased BMP-4 and BMPR-IA, and decreased BMPR-II relative expression in newborn kidneys. These changes were statistically significant for BMP-4, BMPR-IA, and -II after exposure on days 1-3 p.c. (P <.001 each), and for BMP-4 and BMPR-IA after exposure on days 4-7 p.c. (P <.001 and P =.005, respectively). Immunohistochemistry and in situ hybridization (ISH) showed aberrant expression and localization of these molecules at the histological level. Our findings suggest that GSM-like RFR interferes with gene expression during early gestation and results in aberrations of BMP expression in the newborn. These molecular changes do not appear to affect renal organogenesis and may reflect a delay in the development of this organ. The differences of relative BMP expression after different time periods of exposure indicate the importance of timing for GSM-like RFR effects on embryonic development.

(29) Salford LG, Brun AR, Eberhardt JL, Malmgren L, Persson BRR, Nerve cell damage in mammalian brain after exposure to microwaves from GSM mobile phones. *Environ Health Persp* Online January 29, 2003.

The possible risks of radio-frequency electromagnetic fields for the human body is a growing concern for the society. We have earlier shown that weak pulsed microwaves give rise to a significant leakage of albumin through the blood-brain barrier (BBB). Now we have investigated whether a pathological leakage over the BBB might be combined with damage to the neurons. Three groups of each 8 rats were exposed for 2 hours to GSM mobile phone electromagnetic fields of different strengths. We found, and present here for the first time, highly significant (p< 0.002) evidence for neuronal damage in both the cortex, the hippocampus and the basal ganglia in the brains of exposed rats.

(30) Santini R, Santini P, Danze JM, Le Ruz P, Seigne M.Study of the health of people living in the vicinity of mobile phone base stations: I. Influence of distance and sex. *Pathol Biol* (Paris) 50(6):369-373, 2002. [Article in French]

A survey study using questionnaire was conducted in 530 people (270 men, 260 women) living or not in vicinity of cellular phone base stations, on 18 Non Specific Health Symptoms. Comparisons of complaints frequencies (CHI-SQUARE test with Yates correction) in relation with distance from base station and sex, show significant (p < 0.05) increase as compared to people living > 300 m or not exposed to base station, till 300 m for tiredness, 200 m for headache, sleep disturbance, discomfort, etc. 100 m for irritability, depression, loss of memory, dizziness, libido decrease, etc. Women significantly more often than men (p < 0.05) complained of headache, nausea, loss of appetite, sleep disturbance, depression, discomfort and visual perturbations. This first study on symptoms experienced by people living in vicinity of base stations shows that, in view of radioprotection, minimal distance of people from cellular phone base stations should not be < 300 m.

(31) Sarimov R, Malmgren L.O.G., Markova, E., Persson, B.R.R.. Belyaev, I.Y. Nonthermal GSM microwaves affect chromatin conformation in human lymphocytes similar to heat shock. *IEEE Trans Plasma Sci* 32:1600-1608, 2004.

Here we investigated whether microwaves (MWs) of Global System for Mobile Communication (GSM) induce changes in chromatin conformation in human lymphocytes. Effects of MWs were studied at different frequencies in the range of 895-915 MHz in experiments with lymphocytes from seven healthy persons. Exposure was performed in transverse electromagnetic transmission line cell (TEM-cell) using a GSM test-mobile phone. All standard modulations included 2 W output power in the pulses, specific absorbed rate (SAR) being 5.4 mW/kg. Changes in chromatin conformation, which are indicative of stress response and genotoxic effects, were measured by the method of anomalous viscosity time dependencies (AVTD). Heat shock and treatment with the genotoxic agent camptothecin, were used as positive controls. 30-min exposure to MWs at 900 and 905 MHz resulted in statistically significant condensation of chromatin in lymphocytes from 1 of 3 tested donors. This condensation was similar to effects of heat shock within the temperature window of 40/spl deg/C-44/spl deg/C. Analysis of pooled data from all donors showed statistically significant effect of 30-min exposure to MWs. Stronger effects of MWs was found following 1-h exposure. In replicated experiments, cells from four out of five donors responded to 905 MHz.

Responses to 915 MHz were observed in cells from 1 out of 5 donors, p<0.002. Dependent on donor, condensation, 3 donors, or decondensation, 1 donor, of chromatin was found in response to 1-h exposure. Analysis of pooled data from all donors showed statistically significant effect of 1-h exposure to MWs. In cells from one donor, this effect was frequency-dependent (p<0.01). Effects of MWs correlated statistically significantly with effects of heat shock and initial state of chromatin before exposure. MWs at 895 and 915 MHz affected chromatin conformation in transformed lymphocytes. The conclusion-GSM microwaves under specific conditions of exposure affected human lymphocytes similar to stress response. The data suggested that the MW effects differ at various GSM frequencies and vary between donors.

(32) Schwartz JL, House DE, Mealing GA, Exposure of frog hearts to CW or amplitude-modulated VHF fields: selective efflux of calcium ions at 16 Hz. ***Bioelectromagnetics*** **11(4):349-358, 1990.**

Isolated frog hearts were exposed for 30-min periods in a Crawford cell to a 240-MHz electromagnetic field, either continuous-wave or sinusoidally modulated at 0.5 or 16 Hz. Radiolabeled with calcium (45Ca), the hearts were observed for movement of Ca2+ at calculated SARs of 0.15, 0.24, 0.30, 0.36, 1.50, or 3.00 mW/kg. Neither CW radiation nor radiation at 0.5 Hz, which is close to the beating frequency of the frog's heart, affected movement of calcium ions. When the VHF field was modulated at 16 Hz, a field-intensity-dependent change in the efflux of calcium ions was observed. Relative to control values, ionic effluxes increased by about 18% at 0.3 mW/kg (P less than .01) and by 21% at 0.15 mW/kg (P less than .05), but movement of ions did not change significantly at other rates of energy deposition. These data indicate that the intact myocardium of the frog, akin to brain tissue of neonatal chicken, exhibits movement of calcium ions in response to a weak VHF field that is modulated at 16 Hz.

(33) Somosy Z, Thuroczy G, Kubasova T, Kovacs J, Szabo LD, Effects of modulated and continuous microwave irradiation on the morphology and cell surface negative charge of 3T3 fibroblasts. ***Scanning Microsc*** **5(4):1145-1155, 1991.**

Mouse embryo 3T3 cells were irradiated with 2450 MHz continuous and low frequency (16 Hz) square modulated waves of absorbed energy ranging from 0.0024 to 2.4 mW/g. The low frequency modulated microwave irradiation yielded more morphological cell changes than did the continuous microwave fields of the same intensity. The amount of free negative charges (cationized ferritin binding) on cell surfaces decreased following irradiation by modulated waves but remained unchanged under the effect of a continuous field of the same dose. Modulated waves of 0.024 mW/g dose increased the ruffling activity of the cells, and caused ultrastructural alteration in the cytoplasm. Similar effects were experienced by continuous waves at higher (0.24 and 2.4 mW/g) doses.

(34) Stagg RB, Thomas WJ, Jones RA, Adey WR, DNA synthesis and cell proliferation in C6 glioma and primary glial cells exposed to a 836.55 MHz modulated radiofrequency field. ***Bioelectromagnetics*** **18(3):230-236, 1997.**

We have tested the hypothesis that modulated radiofrequency (RF) fields may act as a tumor-promoting agent by altering DNA synthesis, leading to increased cell proliferation. In vitro tissue cultures of transformed and normal rat glial cells were exposed to an 836.55 MHz, packet-modulated RF field at three power densities: 0.09, 0.9, and 9 mW/cm2, resulting in specific absorption rates (SARs) ranging from 0.15 to 59 muW/g. TEM-mode transmission-line cells were powered by a prototype time-domain multiple-access (TDMA) transmitter that conforms to the North American digital cellular telephone standard. One sham and one energized TEM cell were placed in standard incubators maintained at 37 degrees C and 5% CO2. DNA synthesis experiments at 0.59-59 muW/g SAR were performed on log-phase and serum-starved semiquiescent cultures after 24 h exposure. Cell growth at 0.15-15 muW/g SAR was determined by cell counts of log-phase cultures on days 0, 1, 5, 7, 9, 12, and 14 of a 2 week protocol. Results from the DNA synthesis assays differed for the two cell types. Sham-exposed and RF-exposed cultures of primary rat glial cells showed no significant differences for either log-phase or serum-starved condition. *C6 glioma cells exposed to RF at 5.9 muW/g SAR (0.9 mW/cm2) exhibited small (20-40%) significant increases in 38% of [3H]thymidine incorporation experiments.* Growth curves of sham and RF-exposed cultures showed no differences in either normal or transformed glial cells at any of the power densities tested. Cell doubling times of C6 glioma cells [sham (21.9 +/- 1.4 h) vs. field (22.7 +/- 3.2 h)] also demonstrated no significant differences that could be attributed to altered DNA synthesis rates. Under these conditions, this modulated RF field did not increase cell proliferation of normal or transformed cultures of glial origin.

(35) Stark KD, Krebs T, Altpeter E, Manz B, Griot C, Abelin T, Absence of chronic effect of exposure to short-wave radio broadcast signal on salivary melatonin concentrations in dairy cattle. ***J Pineal Res*** **22(4):171-176, 1997.**

A pilot study was conducted to investigate the influence of electromagnetic fields in the short-wave range (3-30 MHz) radio transmitter signals on salivary melatonin concentration in dairy cattle. The hypothesis to be tested was whether EMF exposure would lower salivary melatonin concentrations, and whether removal of the EMF source would be followed by higher concentration levels. For this pilot study, a controlled intervention trial was designed. Two commercial dairy herds at two farms were compared, one located at a distance of 500 m (exposed), the other at a distance of 4,000 m (unexposed) from the transmitter. At each farm, five cows were monitored with respect to their salivary melatonin concentrations over a period of ten consecutive days. Saliva samples were collected at two-hour intervals during the dark phase of the night. As an additional intervention, the short-wave transmitter was switched off during three of the ten days (off phase). The samples were analyzed using a radioimmunoassay. The average nightly field strength readings were 21-fold greater on the exposed farm (1.59 mA/m) than on the control farm (0.076 mA/m).

The mean values of the two initial nights did not show a statistically significant difference between exposed and unexposed cows. Therefore, a chronic melatonin reduction effect seemed unlikely. *However, on the first night of re-exposure after the transmitter had been off for three days, the difference in salivary melatonin concentration between the two farms (3.89 pg/ml, CI: 2.04, 7.41) was statistically significant, indicating a two- to seven-fold increase of melatonin concentration. Thus, a delayed acute effect of EMF on melatonin concentration cannot completely be excluded.* However, results should be interpreted with caution and further trials are required in order to confirm the results.

(36) Tattersall JE, Scott IR, Wood SJ, Nettell JJ, Bevir MK, Wang Z, Somasiri NP, Chen X. Effects of low intensity radiofrequency electromagnetic fields on electrical activity in rat hippocampal slices. ***Brain Res*** **904(1):43-53, 2001.**

Slices of rat hippocampus were exposed to 700 MHz continuous wave radiofrequency (RF) fields (25.2-71.0 V m(-1), 5-15 min exposure) in a stripline waveguide. At low field intensities, the predominant effect on the electrically evoked field potential in CA1 was a potentiation of the amplitude of the population spike by up to 20%, but higher intensity fields could produce either increases or decreases of up to 120 and 80%, respectively, in the amplitude of the population spike. To eliminate the possibility of RF-induced artefacts due to the metal stimulating electrode, the effect of RF exposure on spontaneous epileptiform activity induced in CA3 by 4-aminopyridine (50-100 &mgr;M) was investigated. Exposure to RF fields (50.0 V m(-1)) reduced or abolished epileptiform bursting in 36% of slices tested. The maximum field intensity used in these experiments, 71.0 V m(-1), was calculated to produce a specific absorption rate (SAR) of between 0.0016 and 0.0044 W kg(-1) in the slices. Measurements with a Luxtron fibreoptic probe confirmed that there was no detectable temperature change (+/-0.1 degrees C) during a 15 min exposure to this field intensity. Furthermore, imposed temperature changes of up to 1 degrees C failed to mimic the effects of RF exposure. These results suggest that low-intensity RF fields can modulate the excitability of hippocampal tissue in vitro in the absence of gross thermal effects. The changes in excitability may be consistent with reported behavioural effects of RF fields.

(37) Vangelova K, Israel M, Mihaylov S. The effect of low level radiofrequency electromagnetic radiation on the excretion rates of stress hormones in operators during 24-hour shifts. ***Cent Eur J Public Health*** **10(1-2):24-28, 2002.**

The aim of the study was to investigate the effect of long term exposure to low level radiofrequency (RF) electromagnetic (EM) radiation on the excretion rates of stress hormones in satellite station operators during 24-hour shifts. Twelve male operators at a satellite station for TV communications and space research were studied during 24-hour shifts. Dosimetric evaluation of the exposure was carried out and showed low level exposure with specific absorption of 0.1127 J.kg-1. A control group of 12 unexposed male operators with similar job task and the same shift system were studied, too. The 11-oxycorticosteroids (11-OCS), adrenaline and noradrenaline were followed by spectrofluorimetric methods on 3-hour intervals during the 24-hour shifts. The data were analyzed by tests for interindividual analysis, Cosinor analysis and analysis of variance (ANOVA). Significant increase in the 24-hour excretion of 11-OCS and disorders in its circadian rhythm, manifested by increase in the mesor, decrease in the amplitude and shift in the acrophase were found in the exposed operators. The changes in the excretion rates of the

catecholamines were significant and showed greater variability of both variables. The long term effect of the exposure to low-level RF EM radiation evoked pronounced stress reaction with changes in the circadian rhythm of 11-OCS and increased variability of catecholamines secretion. The possible health hazards associated with observed alteration in the stress system need to be clarified by identification of their significance and prognostic relevance.

(38) Velizarov, S, Raskmark, P, Kwee, S, The effects of radiofrequency fields on cell proliferation are non-thermal. *Bioelectrochem Bioenerg* 48(1):177-180, 1999.

The number of reports on the effects induced by radiofrequency (RF) electromagnetic fields and microwave (MW) radiation in various cellular systems is still increasing. Until now no satisfactory mechanism has been proposed to explain the biological effects of these fields. One of the current theories is that heat generation by RF/MW is the cause, in spite of the fact that a great number of studies under isothermal conditions have reported significant cellular changes after exposure to RF/MW. Therefore, this study was undertaken to investigate which effect MW radiation from these fields in combination with a significant change of temperature could have on cell proliferation. The experiments were performed on the same cell line, and with the same exposure system as in a previous work [S. Kwee, P. Raskmark, Changes in cell proliferation due to environmental non-ionizing radiation: 2. Microwave radiation, Bioelectrochem. Bioenerg., 44 (1998), pp. 251-255]. The field was generated by signal simulation of the Global System for Mobile communications (GSM) of 960 MHz. Cell cultures, growing in microtiter plates, were exposed in a specially constructed chamber, a Transverse Electromagnetic (TEM) cell. The Specific Absorption Rate (SAR) value for each cell well was calculated for this exposure system. However, in this study the cells were exposed to the field at a higher or lower temperature than the temperature in the field-free incubator i.e., the temperature in the TEM cell was either 39 or 35 +/- 0.1 degrees C. The corresponding sham experiments were performed under exactly the same experimental conditions. The results showed that there was a significant change in cell proliferation in the exposed cells in comparison to the non-exposed (control) cells at both temperatures. On the other hand, no significant change in proliferation rate was found in the sham-exposed cells at both temperatures. This shows that biological effects due to RF/MW cannot be attributed only to a change of temperature. Since the RF/MW induced changes were of the same order of magnitude at both temperatures and also comparable to our previous results under isothermal conditions at 37 degrees C, cellular stress caused by electromagnetic fields could initiate the changes in cell cycle reaction rates. It is widely accepted that certain classes of heat-shock proteins are involved in these stress reactions.

(39) Veyret B, Bouthet C, Deschaux P, de Seze R, Geffard M, Joussot-Dubien J, le Diraison M, Moreau JM, Caristan A, Antibody responses of mice exposed to low-power microwaves under combined, pulse-and-amplitude modulation. *Bioelectromagnetics* 12(1):47-56, 1991.

Irradiation by pulsed microwaves (9.4 GHz, 1 microsecond pulses at 1,000/s), both with and without concurrent amplitude modulation (AM) by a sinusoid at discrete frequencies between 14 and 41 MHz, was assessed for effects on the immune system of Balb/C mice. The mice were immunized either by sheep red blood cells (SRBC) or by glutaric-anhydride conjugated bovine serum albumin (GA-BSA), then exposed to the microwaves at a low rms power density (30 microW/cm2; whole-body-averaged SAR approximately 0.015 W/kg). Sham exposure or microwave irradiation took place during each of five contiguous days, 10 h/day. The antibody response was evaluated by the plaque-forming cell assay (SRBC experiment) or by the titration of IgM and IgG antibodies (GA-BSA experiment). In the absence of AM, the pulsed field did not greatly alter immune responsiveness. In contrast, exposure to the field under the combined-modulation condition resulted in significant, AM-frequency-dependent augmentation or weakening of immune responses.

(40) Wolke S, Neibig U, Elsner R, Gollnick F, Meyer R, Calcium homeostasis of isolated heart muscle cells exposed to pulsed high-frequency electromagnetic fields. *Bioelectromagnetics* 17(2):144-153, 1996.

The intracellular calcium concentration ([Ca(2+)]i) of isolated ventricular cardiac myocytes of the guinea pig was measured during the application of pulsed high-frequency electromagnetic fields. The high-frequency fields were applied in a transverse electromagnetic cell designed to allow microscopic observation of the myocytes during the presence of the high-frequency fields. The [Ca(2+)]i was measured as fura-2 fluorescence by means of digital image analysis. Both the carrier frequency and the square-wave pulse-modulation pattern were varied during the experiments (carrier frequencies: 900, 1,300, and 1,800 MHz pulse modulated at 217Hz with 14 percent duty cycle; pulsation pattern at 900 MHz: continuous wave, 16 Hz, and 50 Hz modulation with 50 percent duty cycle and 30 kHz modulation with 80 percent duty cycle). The mean specific absorption rate (SAR) values in the solution were within one order of magnitude of 1 mW/kg. They varied depending on the applied carrier frequency and pulse pattern. The experiments were designed in three phases: 500 s of sham exposure, followed by 500 s of field exposure, then chemical stimulation without field. The chemical stimulation (K+ -depolarization) indicated the viability of the cells. The K+ depolarization yielded a significant increase in [Ca(2+)]i. Significant differences between sham exposure and high-frequency field exposure were not found except when a very small but statistically significant difference was detected in the case of 900 MHz/50 Hz. However, this small difference was not regarded as a relevant effect of the exposure.

Appendix 3

From The Sunday Times, April 22, 2007
http://www.timesonline.co.uk/tol/news/uk/article1687491.ece

Cancer clusters at phone masts

Daniel Foggo

SEVEN clusters of cancer and other serious illnesses have been discovered around mobile phone masts, raising concerns over the technology's potential impact on health.

Studies of the sites show high incidences of cancer, brain hemorrhages and high blood pressure within a radius of 400 yards of mobile phone masts.

One of the studies, in Warwickshire, showed a cluster of 31 cancers around a single street. A quarter of the 30 staff at a special school within sight of the 90ft high mast have developed tumors since 2000, while another quarter have suffered significant health problems.

The mast is being pulled down by the mobile phone after the presentation of the evidence operator O2 by local protesters. While rejecting any links to ill-health, O2 admitted the decision was "clearly rare and unusual".

Phone masts have provoked protests throughout Britain with thousands of people objecting each week to planning applications. There are about 47,000 masts in the UK.

Dr John Walker, a scientist who compiled the cluster studies with the help of local campaigners in Devon, Lincolnshire, Staffordshire and the West Midlands, said he was convinced they showed a potential link between the angle of the beam of radiation emitted from the masts' antennae and illnesses discovered in local populations.

"Masts should be moved away from conurbations and schools and the power turned down," he said.

Some scientists already believe such a link exists and studies in other European countries suggest a rise in cancers close to masts. In 2005 Sir William Stewart, chairman of the Health Protection Agency, said he found four such studies to be of concern but that the health risk remained unproven.

Appendix 4

SALZBURG RESOLUTION ON MOBILE TELECOMMUNICATION BASE STATIONS

International Conference on Cell Tower Siting
Linking Science & Public Health
Salzburg, June 7-8, 2000
www.land-sbg.gv.at/celltower

1. It is recommended that development rights for the erection and for operation of a base station should be subject to a permission procedure. The protocol should include the following aspects:

   · Information ahead and active involvement of the local public

   · Inspection of alternative locations for the siting

   · Protection of health and wellbeing

   · Considerations on conservation of land- and townscape

   · Computation and measurement of exposure

   · Considerations on existing sources of HF-EMF exposure

   · Inspection and monitoring after installation.

2. It is recommended that a national database be set up on a governmental level giving details of all base stations and their emissions.

3. It is recommended for existing and new base stations to exploit all technical possibilities to ensure exposure is as low as achievable (ALATA-principle) and that new base stations are planned to guarantee that the exposure at places where people spend longer periods of time is as low as possible, but within the strict public health guidelines.

4. Presently the assessment of biological effects of exposures from base stations in the low-dose range is difficult but indispensable for protection of public health. There is at present evidence of no threshold for adverse health effects. Recommendations of specific exposure limits are prone to considerable uncertainties and should be considered preliminary. For the total of all high frequency irradiation a limit value of 100 mW/m2 (10 μW/cm2) is recommended.

   For preventive public health protection a preliminary guideline level for the sum total of exposures from all ELF pulse modulated high-frequency facilities such as GSM base stations of 1 mW/m2 (0.1 μW/cm2) is recommended.

SALZBURG RESOLUTION ON MOBILE TELECOMMUNICATION BASE STATIONS cont'd

International Conference on Cell Tower Siting
Linking Science & Public Health
Salzburg, June 7-8, 2000
www.land-sbg.gv.at/celltower

Disclaimer: The Resolution represents the personal opinion of the undersigning scientist and public health specialist and not that of the organization they are affiliated to.

Dr. Ekkehardt Altpeter	Inst. for Social- and Preventive Medicine, University of Bern	Bern, Switzerland
Dr. Carl Blackman	US Environmental Protection Agency Research Triangle Park,	North Carolina, USA
Dr. Neil Cherry	Lincoln University Christchurch	Christchurch, New Zealand
Prof. Dr. Huai Chiang	Zhejiang University School of Medicine Microwave Lab	Hangzhou, China
Dr. Bill P. Curry	EMSciTek Consulting Co.	Glen Ellyn, Illinois, USA
Prof. Dr. Livio Giuliani[1]	National Institute of Occupational Safety and Prevention (ISPESL)	Rome, Italy
Prof. Dr. Yuri Grigoriev	Centre of Electromagnetic Safety, Institute of Biophysics	Moscow, Russia
Dr. Helene Irvine	Greater Glasgow Health Board, Dept. of Public Health	Glasgow, Scotland, UK
Dr. Christoph König	Federal State of Salzburg, Public Health Dept., Environmental Health	Salzburg, Austria
Prof. Dr. Michael Kundi	University of Vienna, Inst. for Environmental Health	Vienna, Austria
Ronald Macfarlane	Health Promotion and Environmental Protection Office, Toronto Public Health	Toronto, Canada
Dr. Malcolm MacGarvin	Environment Agency	Glenlivet, Scotland, UK
Dr. Fiorenzo Marinelli[1]	Ist. di Citomorfologia C.N.R.	Bologna, Italy
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Dr. Gerd Oberfeld	Federal State of Salzburg, Public Health Dept., Environmental Health	Salzburg, Austria
Dr. Colin Ramsay	Scottish Center for Infection and Environmental Health (SCIEH)	Glasgow, Scotland, UK
MA Cindy Sage	Sage Associates	Santa Barbara, CA, USA
Dr. Luis Slesin	Microwave News	New York ,USA
Prof. Dr. Stan Szmigielski[1]	Department of Microwave Safety, Military Institute of Hygiene and Epidemiology	Warsaw, Poland

[1] This preliminary guideline level of 1 mW/m2 (0.1 μW/cm2) is, by the participants marked with a (1), understood as an operational level for one facility (e.g. a cell tower).

Further Signatures given after the Conference

Prof. Dr. Olle Johansson	Department of Neuroscience, Karolinska Institute	Stockholm, Sweden

Appendix 5

CATANIA RESOLUTION

September 2002, http://www.emrpolicy.org/faq/catania.pdf

The Scientists at the International Conference "State of the Research on Electromagnetic Fields – Scientific and Legal Issues," organized by ISPESL*, the University of Vienna, and the City of Catania, held in Catania (Italy) on September 13–14, 2002, agree to the following:

1. Epidemiological and *in vivo* and *in vitro* experimental evidence demonstrates the existence for electromagnetic field (EMF) induced effects, some of which can be adverse to health.
2. We take exception to arguments suggesting that weak (low intensity) EMF cannot interact with tissue.
3. There are plausible mechanistic explanations for EMF-induced effects, which occur below present ICNIRP and IEEE guidelines and exposure recommendations by the EU.
4. The weight of evidence calls for preventive strategies based on the precautionary principle. At times the precautionary principle may involve prudent avoidance and prudent use.
5. We are aware that there are gaps in knowledge on biological and physical effects, and health risks related to EMF, which require additional independent research.
6. The undersigned scientists agree to establish an international scientific commission to promote research for the protection of public health from EMF and to develop the scientific basis and strategies for assessment, prevention, management and communication of risk, based on the precautionary principle.

Fiorella Belpoggi, Fondazione Ramazzini, Italy
Carl F. Blackman, President of the Bioelectromagnetic Society (1990-1991), Raleigh, USA
Martin Blank, Department of Physiology, Columbia University, New York, USA
Emilio Del Giudice, INFN Milano, Italy
Livio Giuliani, University Camerino, Italy
Settimio Grimaldi, CNR-INMM, Roma, Italy
Lennart Hardell, Department of Oncology, University Hospital, Oerebro, Sweden
Michael Kundi, Institute of Environmental Health, University of Vienna, Austria
Henry Lai, Department of Bioengineering, University of Washington, USA
Abraham R. Liboff, Department of Physics, Oakland University, USA
Wolfgang Löscher, Department of Pharmacology, Toxicology and Pharmacy, School of Veterinary Medicine, Hannover, Germany
Kjell Hansson Mild, National Institute of Working Life, Umea, Sweden
Wilhelm Mosgoeller, Institute for Cancer Research, University of Vienna, Austria
Elihu D. Richter, Unit of Occupational and Environmental Medicine, Hebrew-University-Hadassah, Jerusalem, Israel
Umberto Scapagnini, Neuropharmacology, University of Catania, Italy, Member of the European Parliament
Stanislaw Szmigielski, Military Institute of Hygiene and Epidemiology, Warsaw, Poland
* = Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro, Italy
(National Institute for Prevention and Work Safety, Italy)

Appendix 6

FREIBURGER APPEAL (GERMANY)
October 2002

Out of great concern for the health of our fellow human beings do we - as established physicians of all fields, especially that of environmental medicine - turn to the medical establishment and those in public health and political domains, as well as to the public.

We have observed, in recent years, a dramatic rise in severe and chronic diseases among our patients, especially:
· Learning, concentration, and behavioural disorders (e.g. attention deficit disorder, ADD)
· Extreme fluctuations in blood pressure, ever harder to influence with medications
· Heart rhythm disorders
· Heart attacks and strokes among an increasingly younger population
· Brain-degenerative diseases (e.g. Alzheimer–s) and epilepsy
· Cancerous afflictions: leukemia, brain tumors

Moreover, we have observed an ever-increasing occurrence of various disorders, often misdiagnosed in patients as psychosomatic:
· Headaches, migraines
· Chronic exhaustion
· Inner agitation
· Sleeplessness, daytime sleepiness
· Tinnitus
· Susceptibility to infection
· Nervous and connective tissue pains, for which the usual causes do not explain even the most conspicuous symptoms

Since the living environment and lifestyles of our patients are familiar to us, we can see especially after carefully-directed inquiry a clear temporal and spatial correlation between the appearance of disease and exposure to pulsed high -frequency microwave radiation (HFMR), such as:
· Installation of a mobile telephone sending station in the near vicinity
· Intensive mobile telephone use
· Installation of a digital cordless (DECT) telephone at home or in the neighborhood

We can no longer believe this to be purely coincidence, for:
· Too often do we observe a marked concentration of particular illnesses in correspondingly HFMR-polluted areas or apartments;
· Too often does a long-term disease or affliction improve or disappear in a relatively short time after reduction or elimination of HFMR pollution in the patient's environment;
· Too often are our observations confirmed by on-site measurements of HFMR of unusual intensity.

On the basis of our daily experiences, we hold the current mobile communications technology (introduced in 1992 and since then globally extensive) and cordless digital telephones (DECT standard) to be among the fundamental triggers for this fatal development. One can no longer evade these pulsed microwaves. They heighten the risk of already-present chemical/physical influences, stress the body's immune system, and can bring the body's still-functioning regulatory mechanisms to a halt. Pregnant women, children, adolescents, elderly and sick people are especially at risk.

Our therapeutic efforts to restore health are becoming increasingly less effective: the unimpeded and continuous penetration of radiation into living and working areas particularly bedrooms, an essential

place for relaxation, regeneration and healing causes uninterrupted stress and prevents the patient's thorough recovery.

In the face of this disquieting development, we feel obliged to inform the public of our observations especially since hearing that the German courts regard any danger from mobile telephone radiation as "purely hypothetical" (see the decisions of the constitutional court in Karlsruhe and the administrative court in Mannheim, Spring 2002).

What we experience in the daily reality of our medical practice is anything but hypothetical!
We see the rising number of chronically sick patients also as the result of an irresponsible " safety limits" policy, which fails to take the protection of the public from the short- and long-term effects of mobile telephone radiation as its criterion for action.
Instead, it submits to the dictates of a technology already long recognized as dangerous. For us, this is the beginning of a very serious development through which the health of many people is being threatened.
We will no longer be made to wait upon further unreal research results - which in our experience are often influenced by the communications industry while evidential studies go on being ignored. We find it to be of urgent necessity that we act now!

Above all, we are, as doctors, the advocates for our patients. In the interest of all those concerned, whose basic right to life and freedom from bodily harm is currently being put at stake, we appeal to those in the spheres of politics and public health.

Please support the following demands with your influence:

· New health-friendly communications techniques, given independent risk assessments before their introduction *and, as immediate measures and transitional steps:*
· Stricter safety limits and major reduction of sender output and HFMR pollution on a justifiable scale, especially in areas of sleep and convalescence
· A say on the part of local citizens and communities regarding the placing of antennae (which in a democracy should be taken for granted)
· Education of the public, especially of mobile telephone users, regarding the health risks of electromagnetic fields
· Ban on mobile telephone use by small children, and restrictions on use by adolescents
· Ban on mobile telephone use and digital cordless (DECT) telephones in preschools, schools, hospitals, nursing homes, events halls, public buildings and vehicles (as with the ban on smoking)
· Mobile telephone and HFMR-free zones (as with auto-free areas)
· Revision of DECT standards for cordless telephones with the goal of reducing radiation intensity and limiting actual use time, as well as avoiding the biologically critical HFMR pulsation
· Industry-independent research, finally with the inclusion of amply available critical research results and our medical observations.

Undersigned omitted (more than 3000 signatures)

Appendix 7

HELSINKI APPEAL (FINLAND): 2005

http://www.emrpolicy.org/news/headlines/helsinki_appeal_05.pdf

Dear Member of the European Parliament,

We, undersigned physicians and researchers, feel great concern about the Precautionary Principle not being sufficiently applied to the electromagnetic fields, especially in the radio- and microwave frequency bands.

New applications of wireless technologies are continually being introduced, regardless of the fact that there are plenty of qualified scientific reports reporting possible health risks. According to several studies, both in the cell and animal studies, mobile phone and other RF radiation can induce various disturbances, such as increasing the permeability of the blood-brain-barrier. Also disorders of EEG (electroencephalography) and cognitive functions and in the production of the cell proteins have been reported. The latest epidemiological study by Stefan Lönn, with the well known Swedish professor Anders Ahlbom as a co-author, suggests that the risk of acoustic neurinoma (a nerve tumor in the ear) may increase more than three-fold after 10 years of the mobile phone use.

Unfortunately, the consequences of these disturbances for common health are an open question. This is a matter of great concern. The present safety standards of ICNIRP (International Commission of Non-Ionizing Radiation Protection) do not recognize the biological effects caused by non-ionizing radiation except those induced by the thermal effect. In the light of recent scientific information, the standards recommended by ICNIRP have become obsolete and should be rejected. Especially children and other persons at risk should be taken into account when re-evaluating the limits. This was also suggested in the Freiburg Appeal of 2002, which was signed by more than 3000 European colleagues.

We appeal to you as a member of the European Parliament to act promptly for the adoption of the new safety standard in the European Union.

Another question of importance regards the REFLEX study (Risk evaluation of potential environmental hazards from low-energy electromagnetic field (EMF) exposure using sensitive in-vitro methods), which is carried out by 12 research teams from European universities and other organizations. For example, the REFLEX study showed evidence of genotoxic effects of mobile phone radiation. EU has partly funded REFLEX. The REFLEX study has not been published in the scientific publications, nor refunded. It is absolutely necessary that the REFLEX project will be continued. However, the project should be targeted more to the non-thermal effects and be involved with those researchers, who have already been working in the field of the biological, non-thermal effects.

The European Community should take prompt measures for solving the refunding of the NEW REFLEX project.

Appendix 8

SENSITIVITY TO NON-IONISING RADIATION IN IRELAND

Irish Doctors' Environmental Association (IDEA).
E-mail: IDEA@eircom.net ; *Website:* http://www.ideaireland.org

January 2005

Irish Doctors' Environmental Association (IDEA)
Position Paper on Electro-Magnetic Radiation

The Irish Doctors' Environmental Association believes that a sub-group of the population are particularly sensitive to exposure to different types of electro-magnetic radiation. The safe levels currently advised for exposure to this non-ionizing radiation are based solely on its thermal effects. However, it is clear that this radiation also has non-thermal effects, which need to be taken into consideration when setting these safe levels. The electro-sensitivity experienced by some people results in a variety of distressing symptoms which must also be taken into account when setting safe levels for exposure to non-ionizing radiation and when planning the siting of masts and transmitters.

1. An increasing number of people in Ireland are complaining of symptoms which, while they may vary in nature, intensity and duration, can be demonstrated to be clearly related to exposure to electro-magnetic radiation (EMR).

2. International studies on animals over the last 30 years have shown the potentially harmful effects of exposure to electro-magnetic radiation. In observational studies, animals have shown consistent distress when exposed to EMR. Experiments on tissue cultures and rats have shown an increase in malignancies when exposed to mobile telephone radiation.

3. Studies on mobile telephone users have shown significant levels of discomfort in certain individuals following extensive use or even, in some cases, following regular short-term use.

4. The current safe levels for exposure to microwave radiation were determined based solely on the thermal effects of this radiation. There is now a large body of evidence that clearly shows that this is not appropriate, as many of the effects of this type of radiation are not related to these thermal effects.

The Irish Doctors' Environmental Association believes that the Irish Government should urgently review the information currently available internationally on the topic of the thermal and non-thermal effects of exposure to electro-magnetic radiation with a view to immediately initiating appropriate research into the adverse health effects of exposure to all forms of non-ionizing radiation in this country, and into the forms of treatment available elsewhere. Before the results of this research are available, an epidemiological database should be initiated of individuals suffering from symptoms thought to be related to exposure to non-ionizing radiation. Those claiming to be suffering from the effects of exposure to electro-magnetic radiation should have their claims investigated in a sensitive and thorough way, and appropriate treatment provided by the State. The strictest possible safety regulations should be established for the installation of masts and transmitters, and for the acceptable levels of potential exposure of individuals to electro-magnetic radiation, in line with the standards observed in New Zealand.

Appendix 9

BENEVENTO RESOLUTION
September 2006

The International Commission for Electromagnetic Safety (ICEMS) held an international conference entitled *"The Precautionary EMF Approach: Rationale, Legislation and Implementation"*, hosted by the City of Benevento, Italy, on February 22, 23 & 24, 2006. The meeting was dedicated to W. Ross Adey, M.D. (1922-2004). The scientists at the conference endorsed and extended the 2002 Catania Resolution (4) and resolved that:

1. More evidence has accumulated suggesting that there are adverse health effects from occupational and public exposures to electric, magnetic and electromagnetic fields, or EMF[10], at current exposure levels. What is needed, but not yet realized, is a comprehensive, independent and transparent examination of the evidence pointing to this emerging, potential public health issue.
2. Resources for such an assessment are grossly inadequate despite the explosive growth of technologies for wireless communications as well as the huge ongoing investment in power transmission.
3. There is evidence that present sources of funding bias the analysis and interpretation of research findings towards rejection of evidence of possible public health risks.
4. Arguments that weak (low intensity) EMF cannot affect biological systems do not represent the current spectrum of scientific opinion.
5. Based on our review of the science, biological effects can occur from exposures to both extremely low frequency fields (ELF EMF) and radiation frequency fields (RF EMF). Epidemiological and *in vivo* as well as *in vitro* experimental evidence demonstrates that exposure to some ELF EMF can increase cancer risk in children and induce other health problems in both children and adults. Further, there is accumulating epidemiological evidence indicating an increased brain tumor risk from long term use of mobile phones, the first RF EMF that has started to be comprehensively studied. Epidemiological and laboratory studies that show increased risks for cancers and other diseases from occupational exposures to EMF cannot be ignored. Laboratory studies on cancers and other diseases have reported that hypersensitivity to EMF may be due in part to a genetic predisposition.
6. We encourage governments to adopt a framework of guidelines for public and occupational EMF exposure that reflect the Precautionary Principle[11] -- as some nations

[10] EMF, in this resolution, refers to zero to 300 GHz.

[11] The Precautionary Principle states when there are indications of possible adverse effects, though they remain uncertain, the risks from doing nothing may be far greater than the risks of taking action to control these exposures. The Precautionary Principle shifts the burden of proof from those suspecting a risk to those who discount it.

have already done. Precautionary strategies should be based on design and performance standards and may not necessarily define numerical thresholds because such thresholds may erroneously be interpreted as levels below which no adverse effect can occur. These strategies should include:

6.1. Promote alternatives to wireless communication systems, e.g., use of fiber optics and coaxial cables; design cellular phones that meet safer performance specifications, including radiating away from the head; preserve existing land line phone networks; place power lines underground in the vicinity of populated areas, only siting them in residential neighborhoods as a last resort;

6.2. Inform the population of the potential risks of cell phone and cordless phone use. Advise consumers to limit wireless calls and use a land line for long conversations.

6.3. Limit cell phone and cordless phone use by young children and teenagers to the lowest possible level and urgently ban telecom companies from marketing to them.

6.4. Require manufacturers to supply hands-free kits (via speaker phones or ear phones), with each cell phone and cordless phone.

6.5. Protect workers from EMF generating equipment, through access restrictions and EMF shielding of both individuals and physical structures.

6.6. Plan communications antenna and tower locations to minimize human exposure. Register mobile phone base stations with local planning agencies and use computer mapping technology to inform the public on possible exposures. Proposals for city-wide wireless access systems (e.g. Wi-Fi, WIMAX, broadband over cable or power-line or equivalent technologies) should require public review of potential EMF exposure and, if installed, municipalities should ensure this information is available to all and updated on a timely basis.

6.7. Designate wireless-free zones in cities, in public buildings (schools, hospitals, residential areas) and, on public transit, to permit access by persons who are hypersensitive to EMF.

7. ICEMS[12] is willing to assist authorities in the development of an EMF research agenda. ICEMS encourages the development of clinical and epidemiological protocols for investigations of geographical clusters of persons with reported allergic reactions and other diseases or sensitivities to EMF, and document the effectiveness of preventive interventions. ICEMS encourages scientific collaboration and reviews of research findings.

We, the undersigned scientists, agree to assist in the promotion of EMF research and the development of strategies to protect public health through the wise application of the precautionary principle.

[12] International Commission For Electromagnetic Safety. For information, link to www.icoms.eu.

Signed:

Fiorella Belpoggi, European Foundation for Oncology & Environmental Sciences,

B.Ramazzini, Bologna, Italy

Carl F. Blackman, President, Bioelectromagnetics Society (1990-91), Raleigh, NC, USA

Martin Blank, Department of Physiology, Columbia University, New York, USA

Natalia Bobkova, Institute of Cell Biophysics, Pushchino, Moscow Region

Francesco Boella, National Inst. Prevention & Worker Safety, Venice, Italy

Zhaojin Cao, National Institute Environmental Health, Chinese Center for Disease Control, China

Sandro DíAllessandro, Physician, Mayor of Benevento, Italy, (2001-2006)

Enrico DíEmilia, National Institute for Prevention and Worker Safety, Monteporzio, Italy

Emilio Del Giuduice, National Institute for Nuclear Physics, Milan, Italy

Antonella De Ninno,Italian National Agency For Energy, Environment & Technology, Frascati, Italy

Alvaro A. De Sallas, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

Livio Giuliani, East Veneto&South Triol, National Inst. Prevention & Worker Safety, Camerino University

Yury Grigoryev, Institute of Biophysics; Chairman, Russian National Committee NIERP

Settimo Grimaldi, Inst. Neurobiology & Molecular Medicine, National Research, Rome, Italy

Lennart Hardell, Department of Oncology, University Hospital, Orebro, Sweden

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The effect of distance to cell phone towers on house prices in Florida.

By Sandy Bond | Fall, 2007
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ABSTRACT

This article outlines the results of a study carried out in Florida in 2004 regarding the effect that cell phone tower proximity has on residential property prices. The study involved an analysis of residential property sales transaction data. Both GIS and multiple regression analysis in a hedonic framework were used to determine the effect of linear distance of homes to towers on residential property prices. The results of the research show that prices of properties decreased by just over 2%, on average, after a tower was built. This effect generally diminished with distance from the tower and was almost negligible after about 656 feet.

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The siting of cellular phone transmitting antennas, their base stations, and the towers that support them (towers) is a public concern due to fears of potential health hazards from the electromagnetic fields that these devices emit. Negative media attention to the potential health hazards has only fueled the perception of uncertainty over the health effects. Other regularly voiced concerns about the siting of these towers are the unsightliness of the structures and fear of lowered property values. However, the extent to which such attitudes are reflected in lower property values affected by tower proximity is controversial.

This article outlines the results of a cell phone tower study carried out in Florida in 2004 to show the effect that distance to a tower has on residential property prices. It follows on from several New Zealand (NZ) studies conducted in 2003. (1) The first of the NZ studies examined residents' perceptions toward living near towers, while the most recent NZ study adopted GIS to measure the impact that distance to a tower has on residential property prices using multiple regression analysis in a hedonic pricing framework. The study presented in this article was conducted to determine if homeowners in the United States make price adjustments that are similar to those of NZ homeowners when buying properties near towers, and hence, whether the results can be generally applied.

The article commences with a brief literature review of the previous NZ studies for the readers' convenience. The next section describes the research data and methodology used. The results are then discussed. The final section provides a summary and conclusion.

Literature Review

Property Value Effects

First, an opinion survey by Bond and Beamish (2) was used to investigate the current perceptions of residents towards living near towers in the case study city of Christchurch, New Zealand, and how this proximity might affect property values. Second, a study by Bond and Wang (3) that analyzed property sales transactions using multiple regression analysis was conducted to test the results of the initial opinion survey. It did this by measuring the impact of proximity to towers on residential property prices in four case study areas. The Bond and Xue (4) study refined the previous transaction-based study by including a more accurate variable to account for distance to a tower.

The city of Christchurch was selected as the case study area for all the NZ studies due to the large amount of media attention this area had received in recent years relating to the siting of towers. Two prominent court cases over the siting of towers were the main cause for this attention. (5) Dr. Neil Cherry, a prominent and vocal local professor, brought negative attention to towers by regularly publishing the possible health hazards relating to these structures. (6) This media attention had an impact on the results of the studies outlined next.

The Opinion Survey

The Bond and Beamish opinion survey study included residents in ten suburbs: five case study areas (within 100 feet of a cell phone tower) and five control areas (over 0.6 of a mile from a cell phone tower). Eighty questionnaires (7) were distributed in each of the ten suburbs in Christchurch (i.e., 800 surveys were delivered in total). An overall response rate of 46% was achieved.

The survey study results were mixed, with responses from residents ranging from having no concerns to being very concerned about proximity to a tower. In both the case study and control areas, the impact of proximity to towers on future property values is the issue of greatest concern for respondents. If purchasing or renting a property near a tower, over one-third (38%) of the control group respondents would reduce the price of their property by more than 20%. The perceptions of the case study respondents were less negative, with one-third of them saying they would reduce price by only 1%-9%, and 24% would reduce price by between 10% and 19%.

Transaction-Based Market Study

The Bond and Wang market transaction-based regression study included 4283 property sales, in four suburbs, that occurred between 1986 and 2002 (approximately 1000 sales per suburb). The sales data from before a tower was built was compared to sales data after a tower had been built to determine any variance in price, after accounting for all the relevant independent variables.

Interestingly, the effect of a tower on price (a decrease of between 20.7% and 21%) was very similar in the two suburbs where the towers were built in 2000, after the negative media publicity given to towers following the two legal cases outlined above. In the other two suburbs, the results indicated a tower was either insignificant or increased prices by around 12%, where the towers had been built in 1994, prior to the media publicity.

The main limitation affecting this study was that there was no accurate proximity measure included in the model. A subsequent study was performed using GIS analysis to determine the impact that distance to a tower has on residential property prices. The results from that study are outlined next.

Proximity Impact Study

The Bond and Xue study conducted in 2004 involved analysis of the residential transaction data using the same hedonic framework as the previous Bond and Wang study. It also included the same data as the previous study, but added six suburbs to give a total of ten suburbs: five suburbs with towers located in them and five control suburbs without towers. In addition, the geographical (x, y) coordinates that relate to each property's absolute location were included. A total of 9,514 geocoded property sales were used (approximately 1000 sales per suburb).

In terms of the effect that proximity to a tower has on price the overall results indicate that this is statistically significant and negative. Generally, the closer a property is to the tower, the greater the decrease in price. The effect of proximity to a tower reduces price by 15% on average. This effect is reduced with distance from the tower and is negligible after 1000 feet.

The study reported here, outlined next, adds to the growing body of evidence and knowledge from around the world on property value effects from cell phone towers.

Florida Market Study

The Data

Part of the selection process was to find case study areas where a tower had been built that had a sufficient number of property sales to provide statistically reliable and valid results. Sales were required both before and after the tower was built to study the effect of the existence the tower had on the surrounding property's sale prices.

Case study areas were selected using both GIS maps that showed the location of cellular phone towers, and sale price and descriptive data about each property located in Orange County. The maps and sales data were obtained from the Florida Geographic Data Library (FGDL). (8)

Approximately 60% of the towers located in Orange County were constructed between the years 1990 and 2000. Additionally, frequency distributions of properties sold during that period indicate that twenty of the towers have the greatest potential for impact on the price of residential properties, based on the greatest number of residential properties close to each tower. These twenty towers were selected to construct a data set for the study.

Parcel data recorded in the FGDL was collected from the Office of the Property Appraiser for Orange County, Florida. (9) Residential properties that sold between 1990 and 2000 (the years the towers were constructed) and that are closest to the twenty towers were selected. Areas close to Interstate 4 and limited access roads were avoided to ensure sale prices (i.e., home buyers' choices) were not affected by highway access or traffic noise variables. Similarly, properties south of Colonial Drive were avoided due to the lower socioeconomic nature of that location. The final areas were selected after site visits had been made to verify that each mapped tower existed, to confirm the location of the homes to the tower, and to ensure nonselected towers were not located near the homes that might impact on the study results. Overall, 5783 single-family, residential properties were selected from northeast Orange County (see the Location Map in the Appendix).

Variables

The study investigates the potential impact of proximity to a tower on the price of residential property, as indicated by the dependant variable SALE_PRICE. (10) The study controls for site and structural characteristics by assessing the impact of various independent variables. The independent data set was limited to those available in the data set and known to be related to property price, based on other well-tested models reported in the literature and from valuation theory. The independent variables selected include lot size in square feet (LOT), floor area of the dwelling in square feet (SQFT), age of the dwelling in years (AGE), the time of construction (AFTER_TWR), the closest distance of each home to the associated tower (DISTANCE), and the dwelling's absolute location is indicated by the Cartesian coordinates (XCOORD) and (YCOORD). (11)

The effect of construction of a tower on price is taken into account by the inclusion of the dummy, independent variable AFTER_TWR. By including AFTER_TWR, property prices prior to tower construction can be compared with prices after tower construction. (12) Frequency distributions indicate that among the residential properties sold between 1990 and 2000, approximately 80% of the residential properties were sold after tower construction.

Based on the parcel and tower data for Orange County, the mean sale price of single-family, residential property that sold between 1990 and 2000 is $115,850. The mean square footage is 1535 square feet, the mean lot size is 8525 square feet, and the mean age is 14 years. The mean distance from a residential property to a tower is 1813 feet. (13) Descriptive statistics for select variables are presented in Table 1.

Research Objectives and Methodology

The study hypothesis is that in areas where a tower is constructed, it will be possible to observe discounts made to the selling prices of homes located near these structures. Such a discount will be observed where buyers of homes close to the towers perceive them in negative terms due to, for example, the risk of adverse health, or aesthetic and property value effects.

The literature dealing specifically with the measurement of the impact of environmental hazards on residential sale prices (including proximity to transmission lines, landfill sites, and groundwater contamination) indicates the popularity of hedonic pricing models, as introduced by Court (14) and later Grillches (15) and further developed by Freeman (16) and Rosen. (17) The standard hedonic methodology was used to quantify the effect of cellular phone towers on sale prices of homes located near these. GIS was also adopted to aid the analysis of distance to the towers.

Model Specification

In hedonic housing models the linear and log-linear models are most popular. The linear model implies constant partial effects between house prices and housing characteristics, while the log-linear model allows for nonlinear price effects and is shown in the following equation:

ln[P.sub.i] = [b.sub.0] + [b.sub.1][X.sub.1,i] + [b.sub.2][X.sub.2i] + [b.sub.3][X.sub.3i] ... + [b.sub.n][X.sub.n + 1] + [a.sub.o][D.sub.o] + ... + [a.sub.m][D.sub.m] + [e.sub.0] ...

where:

ln[P.sub.i] = the natural logarithm of sale price

[b.sub.0] = the intercept

[b.sub.1] ... [b.sub.n]; [a.sub.o] ... [a.sub.m] = the model parameter to be estimated, i.e., the implicit unit prices for increments in the property characteristics

[X.sub.1] ... [X.sub.n] = the continuous characteristics, such as land area

[D.sub.o] ... [D.sub.m] = the categorical (dummy) variables, such as whether the sale occurred before (0) or after (1) the tower was built

Sometimes the natural logarithm of land area and floor area is also used. The parameters are estimated by regressing property sales on the property characteristics and are interpreted as the households' implicit valuations of different property attributes. The null hypothesis states that the effect of being located near a tower does not explain any variation in property sale price.

To address the many difficulties in estimating the composite effects of externalities on property price an interactive approach is adopted. (18) To allow the composite effect of site, structure, and location attributes on the value of residential property to vary spatially, they are interacted with the Cartesian coordinates that are included in the model. (19)

Unless the hedonic pricing equation provides for interaction between aspatial and spatial characteristics, the effects of the explanatory variables on the dependant variable will likely be underestimated, misspecified, undervalued, or worse, overvalued. Including the Cartesian coordinates in the model is intended to increase the explanatory power of the estimated model and reduce the likelihood of model misspecification by allowing the explanatory variables to vary spatially and by removing the spatial dependence observed in the error terms of aspatial, noninteractive models.

Empirical Results

The model of choice is one that best represents the relationships between the variables, and has a small variance and unbiased parameters. Adhering to the methodology proposed by Fik, Ling, and Mulligan, (20) various empirical models were selected and progressively tested. The models were based on other well-tested hedonic housing price equations reported in the literature to derive a best-fit model.

To test the belief that the relationship between SALE_PRICE and other specific independent variables such as SQFT, AGE, and DISTANCE is not a linear function of SALE_PRICE, the variables were transformed to reflect the correct relationship. It was found that the best result was obtained from using the log of SALE_PRICE and the square of SQFT, AGE, and DISTANCE.

The methodology progresses from an interactive model specification, which controls for site and structural attributes of residential property as well as the effects of absolute location, to a model that incorporates the impact of explicit location to measure the effects of the proximity to towers (as indicated by DISTANCE) on the sale prices of residential property.

Preliminary tests of each model, proceeding from interactive aspatial and spatial estimates, were executed to identify an appropriate polynomial order, or a model that provided the greatest number of statistically significant coefficients and the highest adjusted R-squared value. (21)

Like the study by Fik, Ling, and Mulligan, sensitivity analyses suggested the use of a fourth-order model, at most. Similarly, the following model specifications are estimated with a stepwise regression procedure to minimize the potential for model misspecification due to multicollinearity and to ensure that only the independent variables offering the greatest explanatory power are included in the second model. The study used Levene's test for equality of variances. The assumption of homoskedasticity, like the assumption of normality, has been satisfied.

Model 1 was utilized as a benchmark for the second model. The sale price (SALE_PRICE) is estimated using the following independent variables: lot size (LOT); square footage of the dwelling (SQFT); age of the dwelling in years (AGE); and the dwelling's absolute location (XCOORD) and (YCOORD). To investigate the effect of tower construction on the price of homes, the dummy variable (AFTER TWR) was also included. Residential sale prices prior to tower construction (AFTER_TWR = 0) were compared to sale prices after tower construction (AFTER_TWR = 1). With the addition of the absolute location, Model 1 was used to provide a sound model specification, to maximize the explanatory value of the study and minimize the potential for misspecification in the estimated second model.

Model 2 includes distance-based measures indicating the property's explicit location, with respect to the closest tower. Both explicit distance and the distance squared were included. Model 2 integrated the base model (Model 1) with the distance from the tower to the property. The independent variable DISTANCE is introduced in the model and interacted with the variables from Model 1. This model is used to assess the variation in sale price due to proximity to a tower.

Table 2 shows the development of a spatial and fully interactive model specification to estimate the effects of the proximity to towers on the price of residential property, according to Model 1, the base model.

In the semilogarithmic equation the interpretation of the dummy variable coefficients involves the use of the formula 100([e.sup.b]n - 1), where bn is the dummy variable coefficient. (22) This formula derives the percentage effect on price of the presence of the factor represented by the dummy variable.

Results from Model I suggest that the price of residential properties sold after the construction of a tower increases by 1.47% (i.e., AFTER_TWR = 1.46E-02). Interactions with AFTER_TWR and other variables also suggest an increase in the price for single-family residential properties sold after tower construction. Among the control variables, SQFT increases price by 0.059% with each additional square foot of space (i.e., SQFT = 5.88E). AGE reduces price by 0.25% for each additional year of age. The t-statistics for the explanatory variables SQFT, AGE, XCOORD, and YCOORD suggest significant explanatory power within the specification (i.e., SQFT = 47, [AGE.sup.2] = 7, XCOORD = -7.105 and YCOORD = 6.799). Model 1 accounts for 82% of the variation in the SALE_PRICE (i.e., Adj. R-Squared = 0.8219987).

Model 2 introduces the independent variable DISTANCE to assess the variation in sale price due to the external effect of a tower. The Model 2 results are presented in Table 3; Table 4 provides a summary of the distance results.

The results clearly show that the price of residential property increases with the distance from a tower. The independent variable, DISTANCE, estimates a coefficient with a positive sign, which increases with increasing distance from the tower (i.e., DISTANCE = 5.69E-05). As distance

from the tower increases by 10 feet, price of a residential property increases by 0.57%. Moreover, the t-statistic associated with the estimated coefficient indicates the significance of the explanatory power of this variable (i.e., t-statistic = 10.751).

DISTANCE presents significant interactions with the other independent variables. The t-statistics associated with these interactions provide strong evidence that the price of residential property, while highly associated with site and structural characteristics, may be significantly impacted by proximity to towers (i.e., AFTER_TWR*DISTANCE = 3.519; [DISTANCE.sup.2] = -12.258; DISTANCE*AGE = 4.829).

Further, although the estimated effect of the explanatory variable AFTER_TWR continues to suggest that the value of residential property increases with the distance from towers, the interactive nature of AFTER_TWR with [DISTANCE.sup.2] suggests that the effect of AFTER_TWR may vary due to varying distances from the tower. Indeed, the estimated coefficient for AFTER_TWR from Model 1 is diminished in Model 2 when the explicit, distance-based locational attribute is included in the model specification (i.e., Model 1, AFTER_TWR = 1.46E-02 (1.47%); Model 2, AFTER_TWR = 0.012722 (1.28%)).

Limitations

This study analyzed residential property sales from different but neighboring suburbs as an entire data set, i.e., the suburbs were grouped together and analyzed as a whole. The absolute location was included in the model to take into account composite externalities as well as to allow these and other independent variables in the model to vary spatially, and therefore preclude the need to analyse neighborhoods separately. However, it is possible that not all neighborhood differences were accounted for.

For example, when comparing these results to those from the NZ study by Bond and Xue, it appears the results from both studies based on an analysis of the whole data set were similar. Towers have a statistically significant, but minimal, effect on the prices of proximate properties. However, what the NZ study showed by analyzing the suburbs separately was that substantive differences exist in the effect that towers have on property prices between suburbs, since the distribution of the property sale prices is quite different in each. It is possible that if the current study had analyzed suburbs separately that similar differences would have been found.

Summary and Conclusions

This article presents the results of a study carried out in Florida in 2004. The study involved the analysis of market transaction data of single-family homes that sold in Orange County between 1990 and 2000 to investigate the effect on prices of property in close proximity to a tower. The results showed that while a tower has a statistically significant effect on prices of property located near a tower, this effect is minimal.

Each geographical location is unique. Residents' perceptions and assessments of risk vary according to a wide range of processes including psychological, social, institutional, and cultural. The results of this study may vary with the NZ results not only due to the differences in study design (for example, this study excluded an analysis at a neighborhood level), but also due to differences in the landscape. In New Zealand, there are fewer structures such as high voltage overhead transmission lines, cell phone towers, and billboards than there are in the United States. As a result, it is possible that U.S. residents simply have become accustomed to these features and so notice them less.

The value effects from towers may vary over time as market participants' perceptions change due to increased public awareness regarding the potential (or lack of) adverse health and other effects of living near a towers. Further research into factors that impact on the degree of negative reaction from residents living near these structures could provide useful insights that help explain the effects on property price. Such factors might include, for example, the kinds of health and other risks residents associate with towers; the height, style, and appearance of the towers; how visible the towers are to residents and how they perceive such views; and the distance from the towers residents feel they have to be to be free of concerns.

As the results reported here are from a case study conducted in 2004 in a specific geographic area (Orange County, Florida) the results should not be generally applied. As Wolverton and Bottemiller explain,

> The limits on generalizations are a universal problem for real property sale data because analysis is constrained to properties that sell and sold properties are never a randomly drawn representative sample. Hence, generalizations must rely on the weight of evidence from numerous studies, samples, and locations. (23)

Thus, many similar studies in different geographic locations would need to be conducted to determine if the results are consistent across time and space. Such studies would need to be of similar design, however, to allow valid comparison between them. As suggested by Bond and Wang, the sharing of results from similar studies would aid in the development of a global database to assist appraisers in determining the perceived level of risk associated with towers and other similar structures from geographically and socioeconomically diverse areas.

Appendix

Location Map, Orange County, Florida

[ILLUSTRATIONS OMITTED]

Additional Reading

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by Sandy Bond, PhD

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(2.) Bond and Beamish, "Cellular Phone Towers: Perceived Impact on Residents and Property Values."

(3.) Bond and Wang, "The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods."

(4.) Bond and Xue, "Cell Phone Tower Proximity Impacts on House Prices: A New Zealand Case Study."

(5.) McIntyre v. Christchurch City Council, NZRMA 289 (1996), and Shirley Primary School v. Telecom Mobile Communications Ltd., NZRMA 66 (1999).

(6.) For example see Neil Cherry, Health Effects Associated with Mobil Base Stations In Communities: The Need for Health Studies, Environmental Management and Design Division, Lincoln University (June 8, 2000); available at http://pages.britishlibrary.net/orange/cherryonbasestations.htm.

(7.) Approved by the University of Auckland Human Subjects Ethics Committee (reference 2002/185).

(8.) The FGDL is an assemblage of virtually every geographic data set for Florida that the GeoPlan Center of the University of Florida was able to obtain, this mostly from government sources, including the Federal Communications Commission.

(9.) As reported to the Florida Department of Revenue.

(10.) Model 1 and Model 2 estimate the log of the SALE_PRICE.

(11.) For further discussion of the significance of the absolute location in the form of {x, y} coordinates see Timothy J. Fik, David C. Ling, and Gordon F. Mulligan, "Modeling Spatial Variation in Housing Prices: A Variable Interaction Approach," Real Estate Economics 31 (Winter 2003): 647-670.

(12.) Dummy variables for each year of residential sales were also incorporated into both model specifications to control for the potential effects of time on the price of residential property.

(13.) Initially, HEIGHT was also included among the explanatory variables. However, the HEIGHT variable provided no significant explanatory power.

(14.) A.T. Court, "Hedonic Price Indexes with Automotive Examples," in The Dynamics of Automobile Demand (New York: General Motors, 1939).

(15.) Zvi Griliches, ed., Price Indexes and Quality Change (Cambridge, Mass.: Harvard University Press, 1971.).

(16.) A. Myrick Freeman, III, The Benefits of Environmental Improvement: Theory and Practice (Baltimore: Johns Hopkins University Press, 1979).

(17.) Sherwin Rosen, "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition," Journal of Political Economy 82, no. 1 (Jan/Feb 1974): 34-55.

(18.) Externalities include influences external to the property such as school zoning, proximity to both amenities and disamenities, and the socioeconomic make-up of the resident population.

(19.) Model misspecifications could include inaccurate estimates of the regression coefficients, inflated standard errors of the regression coefficients, deflated partial t-tests for the regression coefficients, false nonsignificant p-values, and degradation of the model predictability.

(20.) Fik, Ling, and Mulligan.

(21.) Ibid., 633.

(22.) Robert Halvorsen and Raymond Palmquist, "The Interpretation of Dummy Variables in Semilogarithmic Equations," American Economic Review 70, no. 3 (June 1980): 474-475.

(23.) Marvin L. Wolverton and Steven C. Bottemiller, "Further Analysis of Transmission Line Impact on ResidentialProperty Values," The Appraisal Journal (July 2003): 252.

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Bond is currently a senior lecturer at Curtin University of Technology. Her doctoral research was on the assessment of stigma relating to remediated contaminated property. Her current areas of research interest include the valuation of contaminated land, the impact of cell phone towers and high voltage transmission lines on residential property values, and public sector asset valuation. She has published numerous articles in journals in New Zealand, Australia, Malaysia, the United Kingdom, and the United States, and was responsible for drafting the NZPI Practice Standard on the Valuation of Contaminated Sites. Contact: dr_sandybond@yahoo.com

Table 1 Descriptive Statistics for Selected Variables, Orange County, Florida

Variable	Mean	Std. Dev.	Min.	Max.

SALE-PRICE	113830.6	58816.68	45000	961500
SQFT	1535.367	503.8962	672	5428
LOT	8525.193	4363.28	1638	107732
AGE	13.92755	10.03648	0	35
XCOORD	664108.9	6130.238	640460	671089
YCOORD	511489.4	2422.946	506361	531096
DISTANCE	1813.077	725.5693	133	6620

Notes: n = 5783. Polynomial expansions of the independent variables, identified by the [VARIABLE.sup.2] were included in the interactions in the two model specifications discussed in the methodology.

Table 2 Model 1 Results

Variables	Est. Coefficient	Std. Error	Std. Coefficient	t-Stat
Constant	3.689244	0.257416		14.332
AFTER_TWR	1.46E-02	5.08E-03	0.0353	2.867
AFTER_TWR*AGE	5.99E-04	2.62E-04	0.0395	2.290
AFTER_TWR*LOT	8.79E-07	2.91E-07	0.0272	3.018
SQFT	3.88E-04	8.20E-06	1.2072	47.368
[SQFT.sup.2]	-3.02E-08	1.90E-09	-0.3779	-15.912
SQFT*AGE	3.52E-07	1.78E-07	0.0429	1.982
AGE	-2.81E-03	5.17E-04	-0.1739	-5.429
[AGE.sup.2]	7.12E-05	9.94E-06	0.1527	7.165
XCOORD	-1.14E-06	1.61E-07	-0.0432	-7.105
YCOORD	3.05E-06	4.48E-07	0.0456	6.799

Variables	Significance
Constant	0.0000
AFTER_TWR	0.0042
AFTER_TWR*AGE	0.0221
AFTER_TWR*LOT	0.0026
SQFT	0.0000
[SQFT.sup.2]	0.0000
SQFT*AGE	0.0475
AGE	0.0000
[AGE.sup.2]	0.0000
XCOORD	0.0000
YCOORD	0.0000

Notes: n = 5783. Adjusted [R.sup.2] = 0.8219987.

Table 3 Model 2 Results

Variable	Est. Coefficient	Std. Error	Std. Coefficient
Constant	3.097387	0.268028	
AFTER_TWR	0.012722	4.42E-03	0.0309
AFTER_TWR*AGE			
AFTER_TWR*LOT	1.26E-06	2.86E-07	0.0389
[AFTER_TWR*DISTANCE.sup.2]	2.72E-09	7.73E-10	0.0550
SQFT	4.01E-04	8.45E-06	1.2464
[SQFT.sup.2]	-3.04E-08	1.93E-09	-0.3797
SQFT*AGE			
AGE	-2.80E-03	3.95E-04	-0.1731
[AGE.sup.2]	6.72E-05	9.70E-06	0.1442
XCOORD	-1.61E-06	1.63E-07	-0.0610
YCOORD	4.70E-06	4.80E-07	0.0702

DISTANCE	5.69E-05	5.29E-06	0.2548
[DISTANCE.sup.2]	-1.49E-08	1.22E-09	-0.2927
DISTANCE*AGE	6.20E-07	1.28E-07	0.0909
DISTANCE*SQFT	-5.43E-09	2.71E-09	-0.0568

Variable	t-Stat	Significance
Constant	11.556	0.0000
AFTER_TWR	2.877	0.0040
AFTER_TWR*AGE		
AFTER_TWR*LOT	4.400	0.0000
[AFTER_TWR*DISTANCE.sup.2]	3.519	0.0004
SQFT	47.460	0.0000
[SQFT.sup.2]	-15.726	0.0000
SQFT*AGE		
AGE	-7.077	0.0000
[AGE.sup.2]	6.931	0.0000
XCOORD	-9.911	0.0000
YCOORD	9.798	0.0000
DISTANCE	10.751	0.0000
[DISTANCE.sup.2]	-12.258	0.0000
DISTANCE*AGE	4.829	0.0000
DISTANCE*SQFT	-2.002	0.0453

Notes: n = 5783. Adjusted [R.sup.2] = 0.8282641

Table 4 Summary of Model 2 Location Results

Variable	Estimated Coefficient	(% Impact on Price)
DISTANCE	5.69E-05	(5.69-03%)0.00%
[DISTANCE.sup.2]	-1.49E-08	

Note: ADJ. [R.sup.2] = 0.8282641

NOTE: All illustrations and photos have been removed from this article.